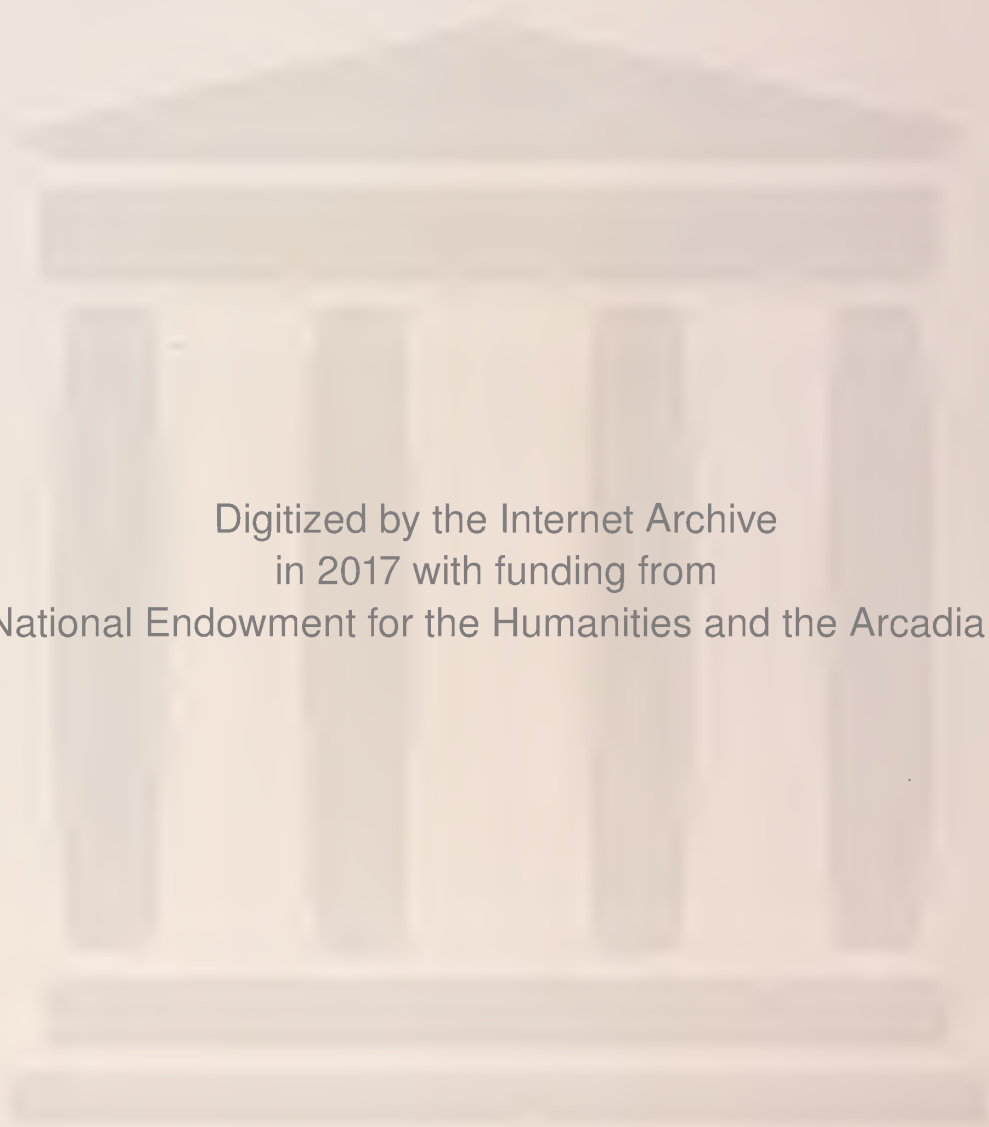
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The New York
Academy of Medicine



*The Henry W. and
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Established 1950


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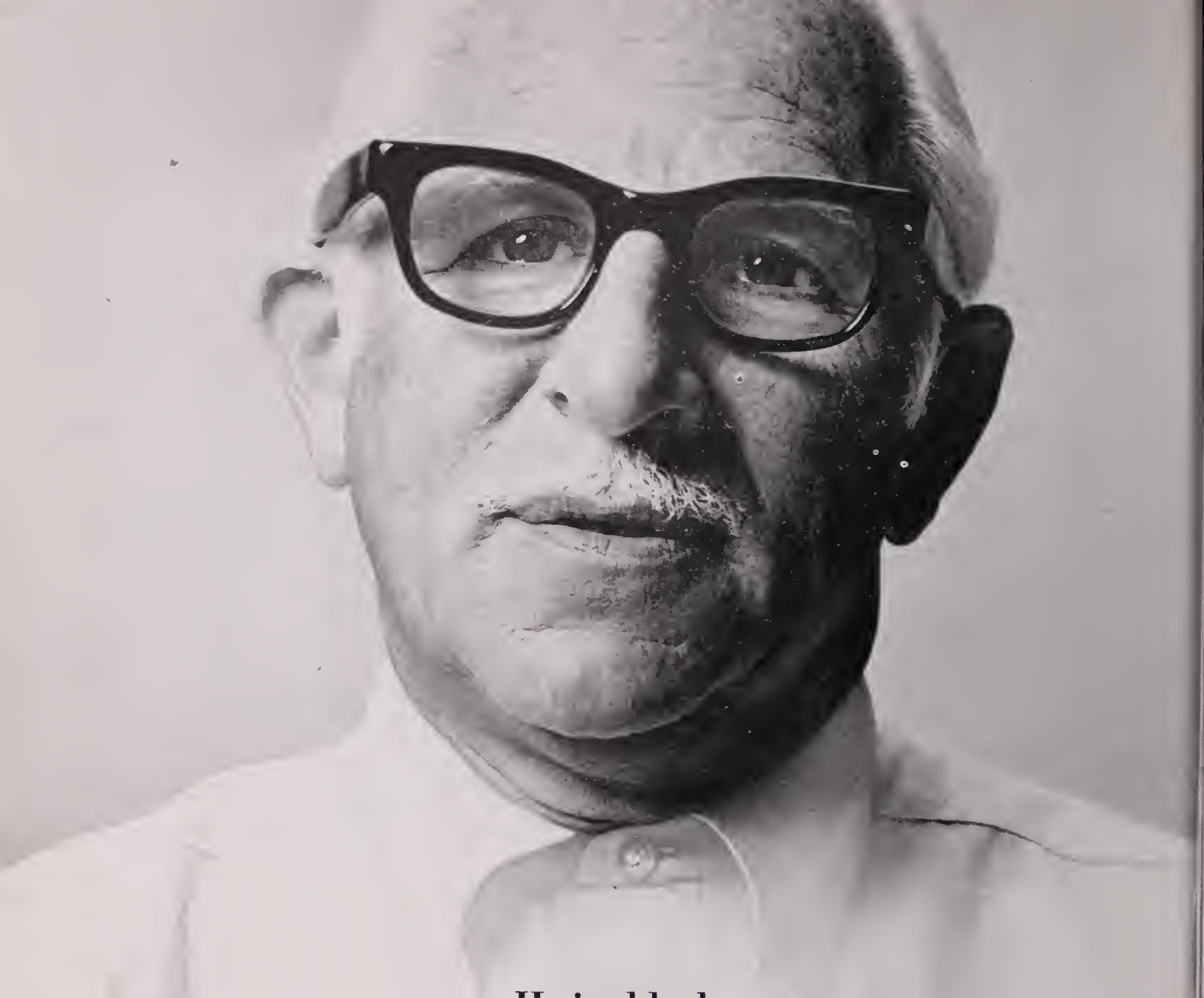
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VOL. LI, NO. 7 JULY, 1968

RHODE ISLAND MEDICAL JOURNAL



THE ROLE OF THE FOOD AND DRUG ADMINISTRATION . . . PAGE 448



He is elderly, he is on corticosteroids, when he needs an antibiotic he may be a candidate for

DECLOSTATIN® 300

Demethylchlortetracycline HCl 300 mg and Nystatin 500,000 units CAPSULE-SHAPED TABLETS Lederle

b.i.d.

To guard susceptible patients against intestinal monilial overgrowth during broad-spectrum therapy—the protection of nystatin is combined with demethylchlortetracycline in DECLOSTATIN.

For your susceptible candidates, prescribe DECLOSTATIN—the broad-spectrum therapy that prevents monilial overgrowth.

Contraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropr measures should be taken.

In infants, increased intracranial pressure with bulging fontanels been observed. All signs and symptoms have disappeared rapidly u cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, rhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—macule ular and erythematous rashes; a rare case of exfoliative dermatitis been reported. Photosensitivity: onycholysis and discoloration o nails (rare). Kidney—rise in BUN, apparently dose related. Tran increase in urinary output, sometimes accompanied by thirst (r Hypersensitivity reactions—urticaria, angioneurotic edema, anaphy Teeth—dental staining (yellow-brown) in children of mothers given drug during the latter half of pregnancy, and in children given the during the neonatal period, infancy and early childhood. Enamel h plasia has been seen in a few children. If adverse reaction or idi crasy occurs, discontinue medication and institute appropriate the

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Shou given 1 hour before or 2 hours after meals, since absorption is imp by the concomitant administration of high calcium content drugs, and some dairy products. Treatment of streptococcal infections sh continue for 10 days, even though symptoms have subsided.

LEDERLE LABORATORIES, A Division of American Cyanamid Com Pearl River, New York

The RHODE ISLAND MEDICAL JOURNAL

Vol. LI, No. 17 July, 1968

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Tofranil®, imipramine hydrochloride

Indications: Tofranil is recommended for the treatment of depressive states of diverse psychopathology.
Contraindications: The concomitant use of this agent and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before this drug may be substituted. Initial dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.
Warning: Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the possible risks, it should not be used during the first trimester of pregnancy. Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.
Precautions: Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy. Because of its anticholinergic effect, caution should be observed in prescribing the drug for patients with increased intraocular pressure.
In rare instances, transient cardiac arrhythmias have occurred in hyperthyroid patients and in patients r
ceiving thyroid medication when
this compound was added to the
regimen.
Imipramine may block the pharm
cologic activity of guanethidine
other related adrenergic neuron
blocking agents.
The drug is not recommended a
present time in patients under 1
of age.
Adverse Reactions: Dryness of t
mouth, tachycardia, constipatio
turbances of accommodation, s
ing, dizziness, weight gain, urin
frequency or retention, nausea
vomiting, peripheral neuritis, mi
parkinson-like syndrome, tremo
rare cases of falling in elderly p
tients, confusional states (with
symptoms as hallucinations and
orientation), activation of psych
schizophrenics and agitation (i
ing hypomanic and manic episo
which may require dosage redu



For him, commencement.

For his mother, the beginning of his career may seem the end of hers. The end of feeling needed and useful. The beginning, perhaps, of a pathological depression.

Tofrānil can often relieve the symptoms of her depression. If it can relieve her mental anguish, you may be able to help her graduate into a new and fruitful life of her own.

Tofrānil could be her commencement, too.

Tofrānil® Geigy
imipramine
hydrochloride

in depression

The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated.

In patients with cardiovascular disease, hyperthyroidism or increased intraocular pressure; in those receiving anticholinergics (including antiparkinsonism agents), thyroid medication or adrenergic neuron-blocking antihypertensive agents; and in those in the first trimester of pregnancy, the precautions discussed in the Prescribing Information should be carefully observed. Although toxic reactions severe enough to require discontinuation of Tofrānil are uncommon, please refer to the Prescribing Information for a description of such instances when discontinuation may be necessary.

r addition of a tranquilizer or
rary discontinuation of the drug,
tiform seizures, orthostatic
ension and substantial blood
ure fall in hypertensive patients,
ra, transient jaundice, bone mar-
epression including agranulocy-
sensitization and skin rash
ing photosensitization, eosino-
and mild withdrawal symptoms
dden discontinuation after pro-
d treatment with high doses.
ional hormonal effects (im-
ce, decreased libido, and estro-
effects) may be observed.
ne-like effects may be more
unced (e.g. paralytic ileus) in
ptible patients and in those
anticholinergic agents (includ-
tiparkinsonism drugs).
tient Adult Dosage: Initially,
. daily, increased, if necessary,
or 200 mg. Maintenance dosage
e lower, 50 to 150 mg. daily, if
ble.

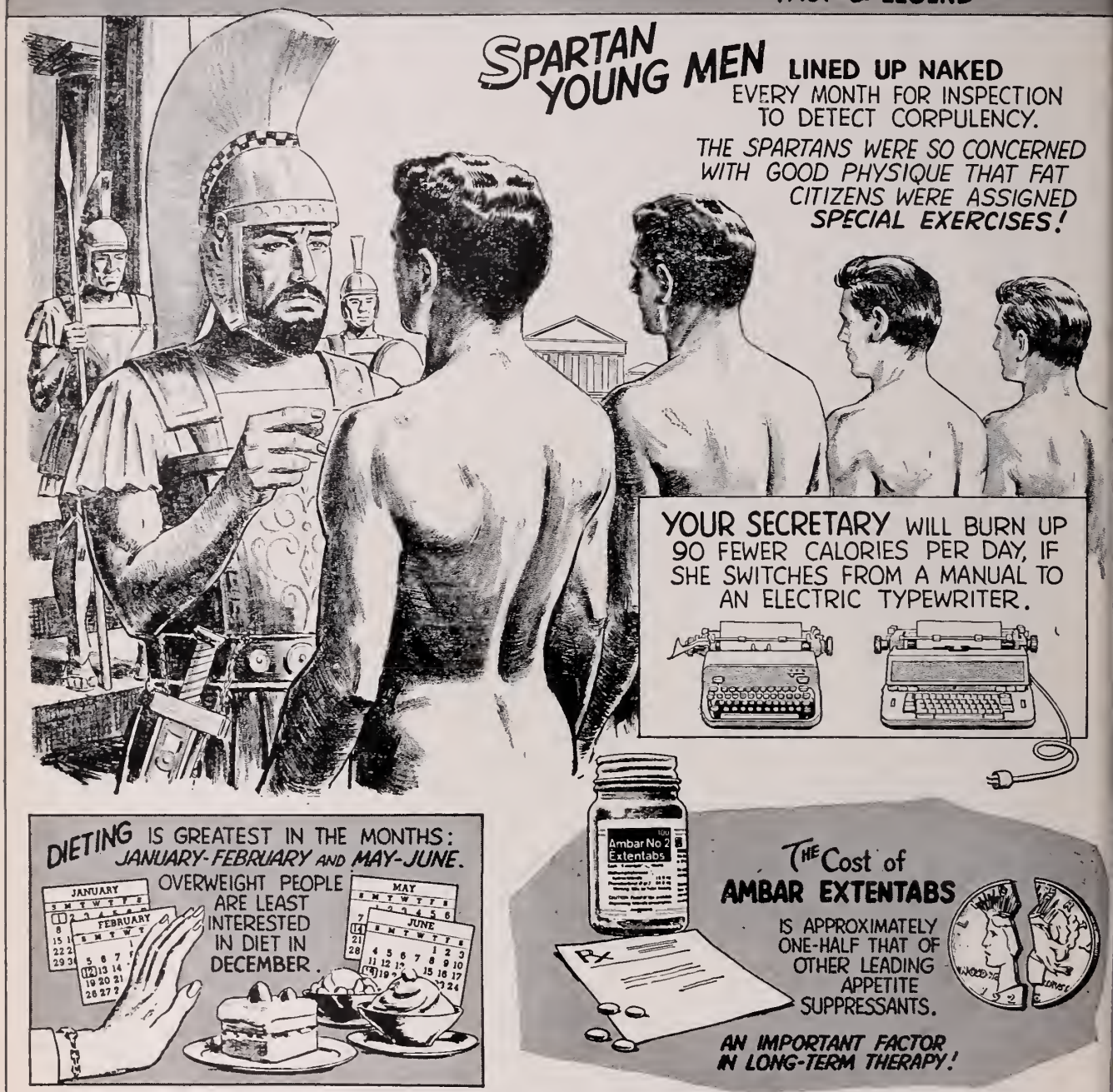
Geriatric and Adolescent Dosage: Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.
A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.
Availability: Round tablets of 25 and 50 mg.; triangular tablets of 10 mg. for geriatric and adolescent use; and ampuls, each containing 25 mg. in 2 cc. for I.M. administration.
(B)R-46-850-C

For complete details, please refer to the full Prescribing Information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

The AMBAR SCRAPBOOK of Obesity Oddities

FACT & LEGEND



CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOS

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.)
(Warning: may be habit forming).

One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety... helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Amb suppresses appetite and helps offset en tional reactions to dieting. **Contraindi tions:** Hypersensitivity to barbiturates sympathomimetics; patients with advanc renal or hepatic disease. **Precautions:** Administer with c tion in the presence of cardiovascular disease or hypertensi **Side Effects:** Nervousness or excitement occasionally not but usually infrequent at recommended dosages. Slight dro iness has been reported rarely. See package insert for furt details.

A. H. ROBINS COMPANY, RICHMOND, VA. 23220 A·H·ROBIN



Photo professionally posed.

No injection after all!

This penicillin produces high, fast levels—orally.

Pen•Vee® K is usually so rapidly and completely absorbed that therapeutic penicillin levels are attained within 15 to 30 minutes. Thus it can often obviate the need for penicillin injections. The higher serum levels produced generally last longer than with those of oral penicillin G.

Indications: Infections susceptible to oral penicillin G: prophylaxis and treatment of streptococcal infections; treatment of pneumococcal, gonococcal, and susceptible staphylococcal infections; prophylaxis of rheumatic fever in patients with a previous history of the disease.
Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.
Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

Wyeth Laboratories Philadelphia, Pa.

ORAL PEN•VEE® K

(potassium phenoxymethyl penicillin)

Wyeth®

THE WASHINGTON SCENE



A Summary Report Prepared by the Washington Office of the American Medical Association.

The American College of Radiology, defending the current use of x-rays by physicians, criticized published scare stories for causing unwarranted fears of x-ray examinations.

Dr. Richard H. Chamberlain, a spokesman for the college, said such articles as in in a recent issue of the Ladies Home Journal distorted the facts in such a manner that it added up to "one of the most tragic things in medicine" by scaring people as to the possible effects of being x-rayed. Dr. Chamberlain said usage of x-rays by physicians in this country is "remarkably good."

"The risks to patients in the performance for medical x-ray examinations are vanishingly small," he said. "Diagnostic x-ray examinations do not endanger the health of patients, despite a few shrill claims to the contrary. We could cite millions of instances where x-ray examinations provide life-saving information to patients."

The College supported in testimony before the Senate Commerce Committee a radiation standards bill, proposed after reports of radiation leaks from color television sets.

"The public has the right to expect protection against harmful amounts of inadvertent exposure to radiation from the operation of electronic devices," Dr. Chamberlain said.

He added that much more is known today about the effects of radiation than about many other environmental contaminants. Although more needs to be learned about the effects of low levels of radiation, he said, "we do know with assurance that their potential for harm is very small."

"The real tragedy occurs when even a single person may be misled by a distortion of radiation hazards to refuse a needed diagnostic x-ray examination," he said.

* * *

The Food and Drug Administration (FDA) has proposed new regulations for the classification of drugs found both safe and effective for their labeled uses in a survey of more than 3,600 prescription drugs.

The new procedures would open the way to increased competition within the drug industry by allowing firms to market drugs reclassified as "not new" or "no longer new" without submitting and awaiting approval of new drug applications (NDA) by the FDA.

A manufacturer that gets an NDA approval for a product has the right to market it exclusively. It is in effect an individual company license. Under the terms of the Food, Drug and Cosmetic Act, any medicine can remain in this "new drug" category regardless of how long it has been on the market.

The new proposal would set up a system for reclassifying the pre-1962 "new drugs" recognized as effective in the drug efficiency study being conducted for FDA by the National Academy of Sciences-National Research Council. The review, authorized by Congress in 1962, covers 3,690 drugs — every drug marketed in this country between 1938 and 1962. The drugs under review had been approved as "new drugs" solely on the basis of safety.

FDA announced that two drugs — metyrapone and metyrapone ditartrate — would be the first "new drugs" reclassified under the proposal. Both were found effective for their recommended uses of testing the functioning of the pituitary glands. They are manufactured by CIBA Pharmaceutical Co.

In its second report to carry out recommendations of the study of every drug manufactured in the United States between 1938 and 1962, the FDA notified the manufacturer of a drug used in the treatment of severely painful menstruation to provide evidence within 60 days that the product is effective for conditions listed in its labeling. The drug lutrexin, manufactured by Hynson, Estcott & Dunning, Inc., of Baltimore, is available on prescription only.

The FDA also has issued a new warning about dangers of the antibiotic drug chloramphenicol.

* * *

Health, Education and Welfare Secretary Wilbur Cohen estimated that the medicaid program may cost the federal government between $2.5 and $3 billion in the fiscal year 1971.

(Continued on Page 436)

Abbott Antihypertensive Building Blocks

A simplified approach to the practical management of hypertension



Enduron: (methyclothiazide) A basic building block for mild hypertensives



Excellent day-long Na^+ output, yet easy on the K^+

Enduron provides an excellent starting therapy. Your patient's sodium excretion is greatly enhanced. Yet potassium loss is low.

The therapeutic action is smooth, and persists for a full 24 hours. With Enduron you can prescribe convenient once-a-day dosage without skimping your patients on day-long thiazide effectiveness.

Of course, as with all thiazides, supplemental dietary potassium should also be considered.

Use Enduron as a basic therapy in patients with mild to moderate hypertension. A single 5-mg. tablet each day is ample in most cases.

Once a day, every day

ENDURON

METHYCLOTHIAZIDE



See Brief Summary on final page of advertisement

Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

MILD TO MODERATE TO SEVERE

Once a day, every day

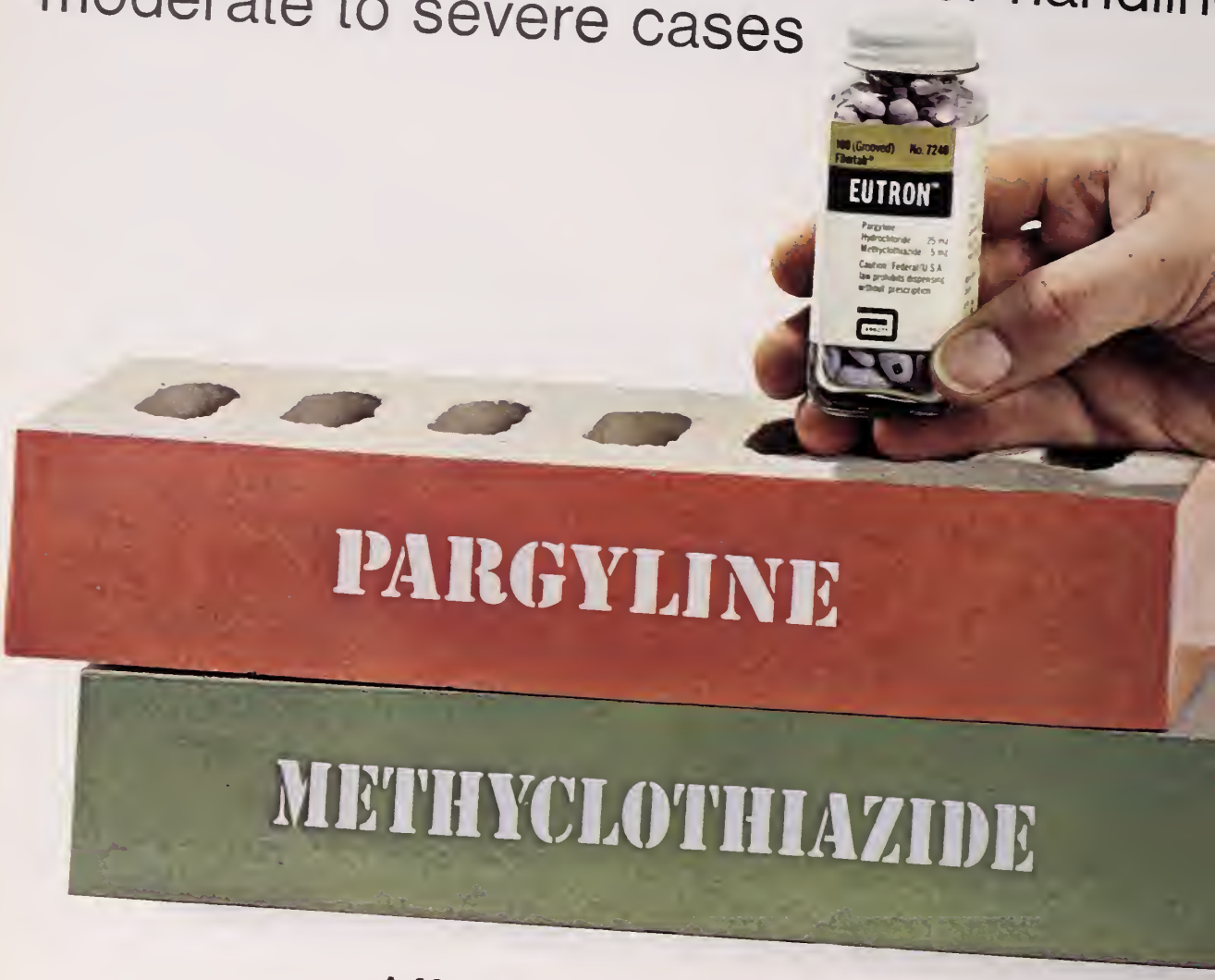
ENDURONYL®

METHYCLOTHIAZIDE 5 mg. with DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.

See Brief Summary on final page of advertisement

801094

Eutron: A unique combination for handlin moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCLOTHIAZIDE 5 mg.

MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symtomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON™

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhibitors; methyldopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage: caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methyclothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions — Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficult in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methyclothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug. 804438R

ABBOTT

TM-TRADEMARK



"Everything looks fine,
but we should do something about that extra weight you're putting on."

Get them while they're easily reversible.

Obesity doesn't happen suddenly. This insidious process has its beginning—and the chances of reversing it are better—during the *first 10 to 15 pounds of weight gain.* When a new dietary pattern must be established, consider the adjunctive use of BAMADEX SEQUELS. Combining the proven *anorexigenic* action of d-amphetamine with the *tranquilizing* effect of meprobamate, BAMADEX SEQUELS controls appetite throughout the day, usually with a single capsule daily.

Contraindications: Dextro-amphetamine sulfate: In hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.
Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.
Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

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381-8

THE WASHINGTON SCENE

(Continued from Page 432)

The estimate for the next fiscal year (1968) is $2.1 billion. The original estimate for the current year was $1.7 but that proved substantially low and the administration has asked for $500 million more.

Congress has put some restrictions on the medicaid program, effective this July 1, and they may result in holding down the 1971 costs below Cohen's estimate.

The Social Security Administration reported that the medicare Part B program, physicians' services, operated at a small deficit in fiscal 1967 which will be covered by the increases from $3 to $4 in monthly premiums.

The percentage of people 65 and over enrolled in the doctor bill insurance part of medicare went up from 92 to 95 per cent during the 6-month open enrollment period that ended April 1. About 700,000 older people who had missed out on their first chance to enroll signed up between October 1, 1967, and April 1 of this year. Now, 18.6 million of the 19.6 million persons 65 and over in the nation are now enrolled for medicare voluntary medical insurance.

Social Security Commissioner Robert M. Ball said that the overall social security fund is in good fiscal condition. Medicare received $3.1 billion in fiscal 1967 and disbursed $2.6 billion, Ball said. He said estimates for the next 25 years showed that the program "has a favorable actuarial balance — namely, that total income over the 25 years ahead is expected to exceed total outgo."

Cohen told a House appropriations subcommittee that HEW was very much concerned and was making an intensive investigation of reported abuses by some physicians in federal medical programs.

He said a number of allegations had been made but that he would not want to make an overall statement until the investigation was completed.

"A typical kind of allegation concerns a doctor who goes into a nursing home — I will be just hypothetical about this — and he is there for an hour and then sends in a bill for an injection of something for every one of 50 people in the institution," Cohen said.

"Then we have had cases of bills being submitted in which the evidence suggests that the volume of services that he is requesting to be paid for is beyond the ability of a particular person to handle. Well, he comes back to that allegation and says, 'I have a nurse and I have an assistant' and so on. So we have to look into each one of them on their merits. We are doing that now.

"The popular criticism usually has to do with the individual fee. I really don't think that is the major issue. The real issue is not so much the fee or the price per unit, but the number of units that the person is saying he delivered."

Cohen said he did not think such practices are widespread but that:

"We have enough to be very much concerned about it."

* * *

A preliminary injunction was issued to halt the sale of a diathermy device distributed by the Diapulse Corporation of America.

The U.S. District Court for the Eastern District of New York, enjoined sales of the Diapulse device, advertised for treatment of 49 diseases and conditions, including tuberculosis, typhoid fever, staph infections, and gangrene.

The diapulse device was seized by FDA in 1965, and found to be misbranded on March 17, 1967, by a Federal court in Hartford, Conn., but the sale of the machine continued pending further appeals.

* * *

A group of physicians specializing in child health has endorsed a bill to require special safety containers for drugs, soaps and other household products involved in the poisoning of 500,000 children each year.

The Accidental Poisoning Committee of the American Academy of Pediatrics endorsed the measure sponsored by Chairman Warren G. Magnuson, D-Wash., of the Senate Commerce Committee. The Academy, in a letter to Magnuson, said the bill was the only "practical way to eliminate hazards from drugs and household products."

The government announced a ban on interstate-shipment of household products containing carbon tetrachloride — a substance used in some cleaning fluids.

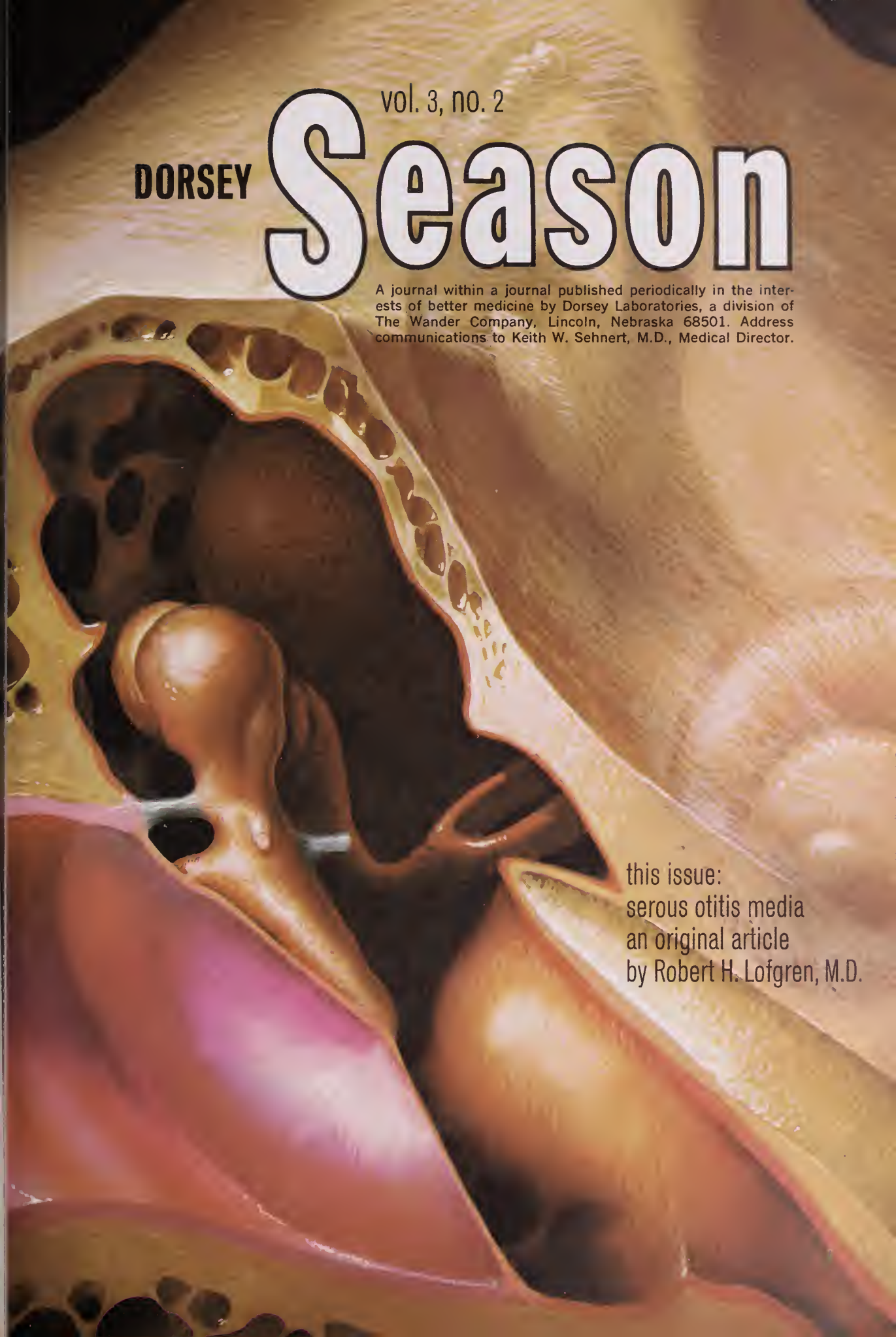
The Food and Drug Administration (FDA) said use of the chemical in a home constitutes a hazard to public health and added there are many safer substitutes available. According to the FDA, carbon tetrachloride can be fatal if the fumes are inhaled. The chemical can also cause damage to the liver, kidneys, brain and nervous system, the agency said.

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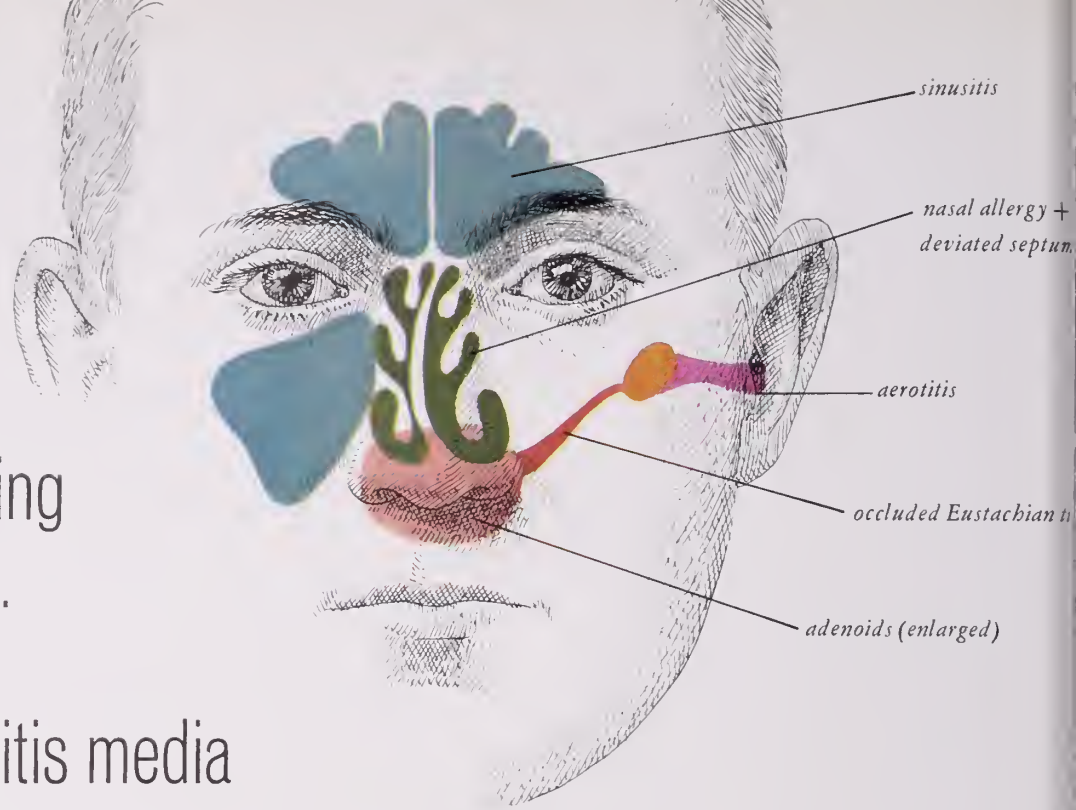
vol. 3, no. 2

DORSEY Season

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this issue:
serous otitis media
an original article
by Robert H. Lofgren, M.D.



the complaining earache... key to serous otitis media

Robert H. Lofgren, M.D.
Associate Surgeon, Massachusetts Eye and Ear Infirmary, Boston, Massachusetts

Serous otitis media is probably the most common ear problem in children, especially in the wintertime. Diagnosis is usually easy in adults, but may be quite difficult in children, especially the very young child where one has to depend almost entirely on the physical findings.

The symptoms of serous otitis are a fullness in the ear, a mild hearing loss and mild earache. The earache can best be described as a "complaining earache" instead of a "screaming earache" as found in purulent otitis media. A young child may be irritable and pull at the ear. In milder cases, and as the ear recovers, gurgling and popping noises can be heard in the ear.

On examination one may see a yellow tympanic membrane and if a fluid level is present the diagnosis becomes easy. However, the eardrum may be dull gray, or slightly pink, or even perfectly normal. Pneumomassage using a Siegle otoscope or a closed-head electric otoscope must be done on both ears, otherwise the diagnosis will be frequently missed. Attempted movement of the drum with the pneumatic otoscope produces either a sluggish motion of the drum or no motion at all instead of the easily movable normal drum. The Rinne test is negative and there is a 15-20 decibel conductive hearing loss. The bone conduction may be better than normal and an air-bone gap may exist even with the air conduction within normal limits. Occasionally one finds a false nerve deafness on the audiogram when thick glue-like fluid causes immobility of both the oval and round window. Both conditions return to normal when the fluid is removed, but they make the interpretation of screening audiograms very difficult.

There is no single cause for serous otitis. One factor always present is blockage of the eustachian tube, but this alone is not enough to produce fluid. There must also be an inflammatory reaction. Blockage of the eustachian tube may be caused by many conditions. In children the most common cause is enlarged adenoids. In the summer the next most common cause is allergy. Upper respiratory infections or influenza are common causes in the winter. Nasal allergy, acute and chronic sinusitis, nasal septal deformity and cleft palate can all cause eustachian tube obstruction. Some children may have a congenitally small eustachian tube, but fortunately they usually "grow out of the problem."

The first sign of a nasopharyngeal tumor is often a serous otitis. One must always rule this out in any adult who later in life develops repeated or persisting serous otitis. Causes sometimes overlooked are nasogastric tubes after surgery, simple obesity and cardiorenal disease, which may produce congestion in the mucosal lining of the eustachian tube. In recent years we have been seeing a new cause—acute otitis media, where the patient is adequately treated with antibiotics but where drainage has not been

stablished either through the eardrum or down the ustachian tube. A sterile exudate is left in the mid-le ear.

he inflammatory response may be caused by a arked negative pressure as in air otitis from flying, r it may be from a mild bacterial or viral infection the middle ear. Serous fluid is a good culture edium and will frequently go on to purulent otitis edia, especially if the original blockage was caused an infectious process such as acute rhinitis or denoiditis. When the infection heals there may be arring in the middle ear mucosa. Mucous glands velop in this tissue and pour out a thick mucoid aterial. This ear usually looks normal until a neumatic otoscope is used. The objectives in treat-g serous otitis are to remove the obstructing agent d to provide drainage from the middle ear. Often is can be accomplished by decongestants and nose rops. If large obstructing adenoids are present they ould be removed. Sinusitis should be treated with al decongestants or nose drops, plus antibiotics here indicated. Nasopharyngeal tumors should be eated. Allergies should be treated with antihista-ines and, where indicated, by desensitization.

the fluid does not clear with medical treatment ithin a week or two, a myringotomy should be one. If there is a question of active infection or if e fluid looks purulent, as is seen at the conclusion f acute otitis, cultures are taken. On adults this can e done in the office without anesthesia. It is no ore painful than an intravenous needle for a blood st. A good safe topical anesthetic has a tremen-ous psychological value to the patient. Children nder the age of 1 require no anesthesia. Between e ages of 1 and 3 anesthesia is not absolutely es-ntial although a general anesthetic may be used to void the child's possible mistrust at follow-up ex-minations. I usually do the myringotomy at the me time as the adenoidectomy if the adenoids are larged. Once drainage has been established with econgestants or by myringotomy, positive pressure flation of the middle ear is invaluable in forcing ut the serous fluid and keeping it from reforming. he patient can do this himself by performing the alsalva maneuver. This should be done several times a day, by taking a deep breath, holding the nose and blowing hard against the closed lips for a second or two.

In resistant cases where the fluid reforms as soon as the myringotomy heals, small polyethylene tubes are inserted through the myringotomy site. Insertion of the tubes, even in adults, usually requires an anesthetic. Good anesthesia can be obtained by infiltrating the canal wall with a local anesthetic, using a #27 needle. Once inserted the patient has no sensation of the tubes' presence. Be careful to caution the patient or parents not to allow any water to get into the ear canal while a myringotomy is open or a tube is in place. Water can be kept out by a pledget of lamb's wool in the ear canal or a cotton pledget thickly coated on the outside with petroleum jelly. I check these patients a week after a myringotomy to be sure it is healed and at two month intervals until the tubes have fallen out, usually within three to six months after insertion.

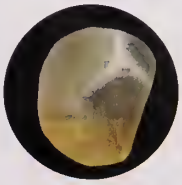
The mucoid type of fluid is so thick and tenacious that it is appropriately called a glue ear. It is aspirated only with difficulty through the eardrum, and occasionally must be removed through a tympanotomy. This thick, glue-like fluid is prone to recur, as the myringotomy usually heals long before the mucous membrane has returned to normal. Repeated myringotomies, as many as ten or twenty, were formerly required for this condition. Now polyethylene tubes are inserted initially when this thick, glue-like material is found. At times a subacute mastoiditis may accompany the serous otitis, which will necessitate a simple mastoidectomy before the condition can be eradicated. Usually the thin serous fluid readily responds to decongestants or to a myringotomy and removal of the eustachian tube obstruction. Occasionally, however, even serous fluid will repeatedly reform. For this, resection of the tympanic plexus of nerves which lies on the promontory of the middle ear has been carried out, as the tympanic branch of the glossopharyngeal nerve is the secretomotor nerve to the ear.

failure to diagnose serous otitis is the most common cause of the recurrent, almost continuous otitis me-

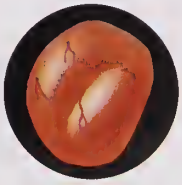
Otoscopic Views



Normal



Acute Serous



Acute Purulent



Chronic Serous

dia seen in young children. In these cases a myringotomy will frequently provide a long-term cure without adenoidectomy or any other surgery. Failure to do this may allow the condition to go on to acute or subacute mastoiditis. Adhesive otitis media with scar tissue binding down the ossicles or tympanosclerosis may also result with permanent impairment of hearing. The prognosis for hearing with adhesive otitis or tympanosclerosis is usually poor. If the adhesions are removed, they reform, and the same is frequently true of tympanosclerosis even after a tympanoplasty. For many of these people a hearing aid is the only solution. The constant negative pressure in long standing serous otitis media may draw in either Schrapnell's membrane or the posterior superior portion of the eardrum forming a pocket to cause a chronic otitis media with cholesteatoma, which may not become apparent until twenty or thirty years later.

The non-medical complications of improper diagnosis or treatment may be even more serious. The irritable child, the frequent bouts of acute purulent otitis media with pain and fever, the expense of antibiotics and doctors, and the time lost from school or work affect the entire family.

In summary, serous otitis has many causes. There is a blocking of the eustachian tube and an inflammatory reaction in the middle ear mucosa, the latter usually caused by a mild infection. The treatment is to provide immediate drainage by decongestants and where necessary, by a myringotomy. The obstructing agent must be removed by surgery if it is adenoid or by oral decongestants, and antihistamines or nasal spray if it is an upper respiratory infection or allergy. Occasionally resistant cases require plastic tubes placed through the eardrum or other more radical surgery. Failure to treat properly leads to hearing loss which may be permanent, repeated acute otitis media or possibly even chronic otitis media with cholesteatoma.

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(Advertisement)

District Medical Society Meetings

PROVIDENCE MEDICAL ASSOCIATION

A meeting of the Providence Medical Association was held at the Rhode Island Medical Society Library on Monday, April 1, 1968. The meeting was called to order at 8:30 p.m. by the President, Dr. William J. MacDonald.

Reading of the minutes of the March meeting was dispensed.

Dr. Bertram H. Buxton, Secretary, reported for the Executive Committee as follows:

At a recent meeting of the Executive Committee Drs. Joseph Karas and Jay Orson were re-named as the Association's representatives on the Health Division of the Rhode Island Council of Community Services.

The President reported that an appeal to the hospitals in the area to permit interns and residents to accept emergency calls received from the public by the Medical Bureau when such physicians are off duty had elicited no favorable responses.

The Special Health Programs Committee reported that it is planning a meeting with the administrative heads of Progress For Providence to consider the developments in the Neighborhood Health Clinics.

The Chairman of the Entertainment Committee reported that the Committee hopes to hold the annual golf tournament in September in the Newport Country Club. The dinner would be at the Viking Hotel in Newport.

The Executive Committee authorized the Treasurer to convert the U.S. Treasury bonds held by the Association to new U.S. Treasury notes paying a higher dividend and maturing in 1975.

Election of New Members

The Secretary reported that the Executive Committee recommended for election to active membership the following physicians:

Doris E. Berger, M.D.
Alfredo R. Esparza, M.D.
Pratarnporn C. Feinstein, M.D.
Melvyn M. Gelch, M.D.
Edward A. Iannuccilli, M.D.
Rocco Marzilli, M.D.
Anthony F. Merlino, M.D.
Richard E. Murphy, Jr., M.D.
Stephen A. Schulman, M.D.

Action: A motion was made, seconded and voted that the physicians recommended for membership be elected.

Announcement by President

Doctor MacDonald called attention to the outstanding clinical program planned by the State Medical Society for its 157th Annual Scientific Assembly on May 7-8. He urged that all members of the Association support this meeting.

Scientific Program

Doctor MacDonald introduced Dr. Charles Cashman, Surgeon, Departments of Surgery and Thoracic Surgery, Rhode Island Hospital, who spoke on "Surgery as an Approach to the Treatment of Angina Pectoris and Myocardial Infarction."

Doctor Cashman reviewed the history of surgical procedures for coronary artery disease. Until sophistication of medical instrumentation made possible better evaluation of coronary circulatory function, however, little meaningful supportive data could be advanced in favor of the results of any procedure due to the subjective clinical nature of coronary artery disease. Moreover it had been known for some time that total occlusion of a coronary vessel was compatible with life providing previous collateral circulation had been established.

The complexities of coronary artery disease have been elucidated to some extent by cineangiography with dye-visualization of the corornary system. This method is expensive and complicated, and candidates must be selected with care for it is not without risk. Moreover the results of such studies cannot stand alone but must be supported by a clinical evaluation as well as other laboratory tests. Ordinarily if by this technic the usual coronary anatomic pattern can be visualized, the presence of chest pain is not the result of coronary disease. Abnormal anatomic patterns may indicate that coronary artery disease is responsible for the chest pain.

An indication for the use of a systemic artery transplant is visible obstruction in more than 75 per cent of the major coronary vessels. Atherosclerosis of the entire coronary vasculature constitutes a contraindication for surgery.

Anginal pain in pre-menopausal females with normal cineangiopraphy is usually due to a hemoglobinopathy with deficient oxyhemoglobin and resultant myocardial hypoxia.

Patients for whom a surgical work-up is indicated include:

1. Individuals under 60 years of age with disabling angina under 3 years of duration.
2. Patients under 45 years of age with previously diagnosed coronary artery disease, a guarded prognosis, and obstruction within 1.5 cm. of the left main coronary artery or within 2.0 cm. of the right main coronary artery.

(Continued on Page 440)

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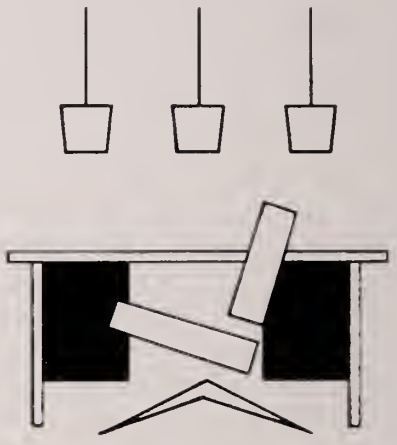
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Precautions: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression.

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Warning: May be habit forming.

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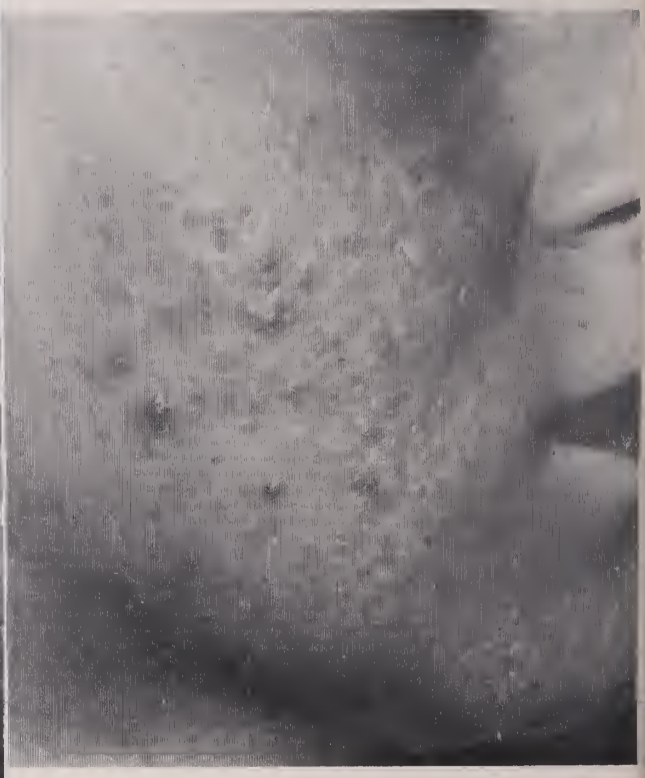
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DERMAQUIZ

Conducted by FRANCESCO RONCHESE, M.D.



Two teenagers, a boy and a girl, with tiny, nodular, reddish (top), whitish-yellowish (bottom).
No pain, discomfort. No inflammatory manifestations. Nothing to squeeze out.



Also a teenager, but with whitish cystic lesions from which sebaceous material can be squeezed out.

Answers on Page 474

PROVIDENCE MEDICAL ASSN.

(Concluded from Page 437)

In considering some of the surgical technics available for treatment of coronary artery disease, Doctor Cashman discussed endarterectomy which has a 40 per cent mortality rate when there is obstruction of the left main coronary artery.

A mortality rate of 40 to 50 per cent is associated with internal mammary artery transplant performed by tunneling this artery into the left ventricular myocardium. Several surgical technics employ tunneling of one or both internal mammary arteries leaving the small branches bleeding.

Another surgical technic introduces oxygen-laden blood from the intraventricular chamber by boring, thus creating connections with the myocardial arterial system which remain potent and thus assist in the development of more adequate myocardial vascularization.

The use of epicardectomy in conjunction with a systemic arterial overlay graft has succeeded in 60 to 80 per cent of the cases if proper selection of patients is observed. One must remember, however, that coronary artery disease is progressive and therefore any surgical treatment is apt to provide only temporary relief of disabling symptoms.

The area most frequently affected in coronary artery thrombosis is that supplied by the external anterior ascending branch and therefore it is this area of the myocardium toward which surgical treatment should be directed.

There is still controversy as to how soon after surgery vascularization is sufficient to permit instituting a postoperative exercise schedule.

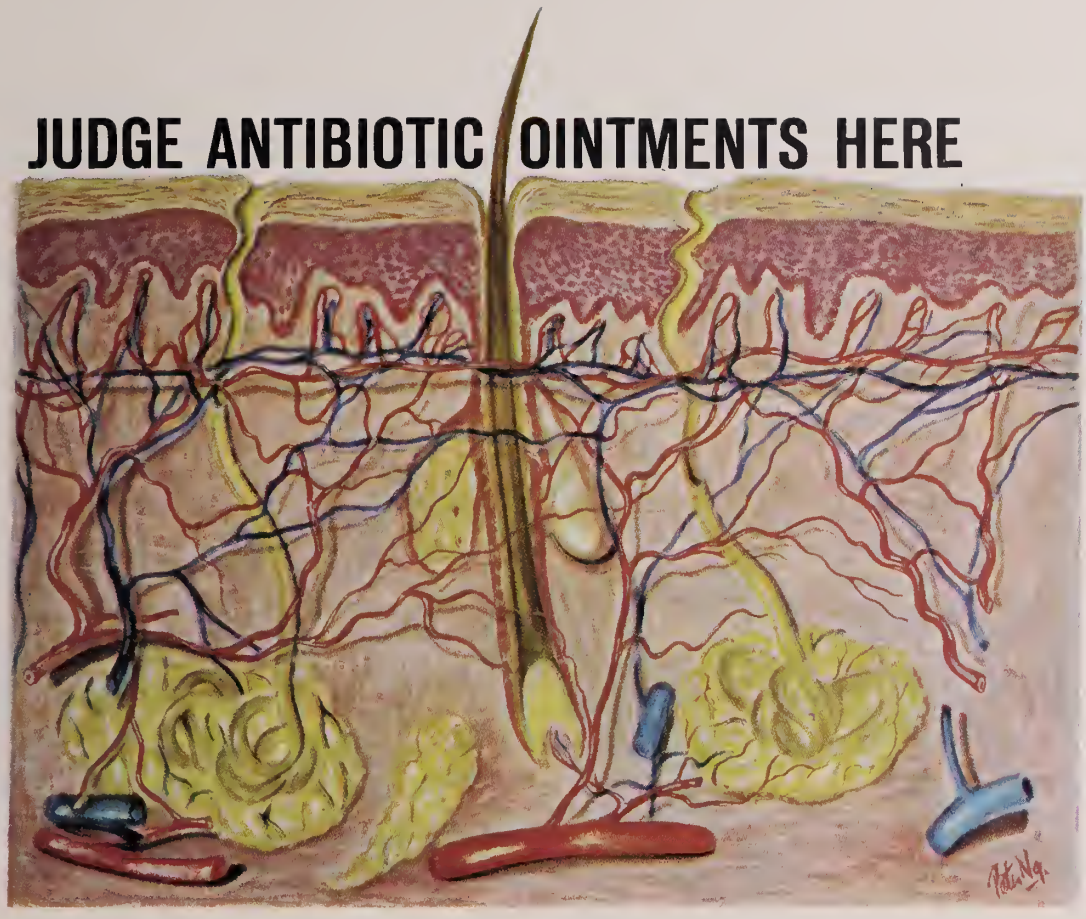
Doctor Cashman in conclusion demonstrated slides and a motion picture film bearing on research and clinical work he has done with regard to the internal mammary overlay surgical technic in the treatment of coronary artery disease.

Adjournment

The meeting was adjourned at 9:55 p.m.
Collation was served
Attendance 37

Respectfully submitted,
BERTRAM H. BUXTON, JR., M.D.
Secretary

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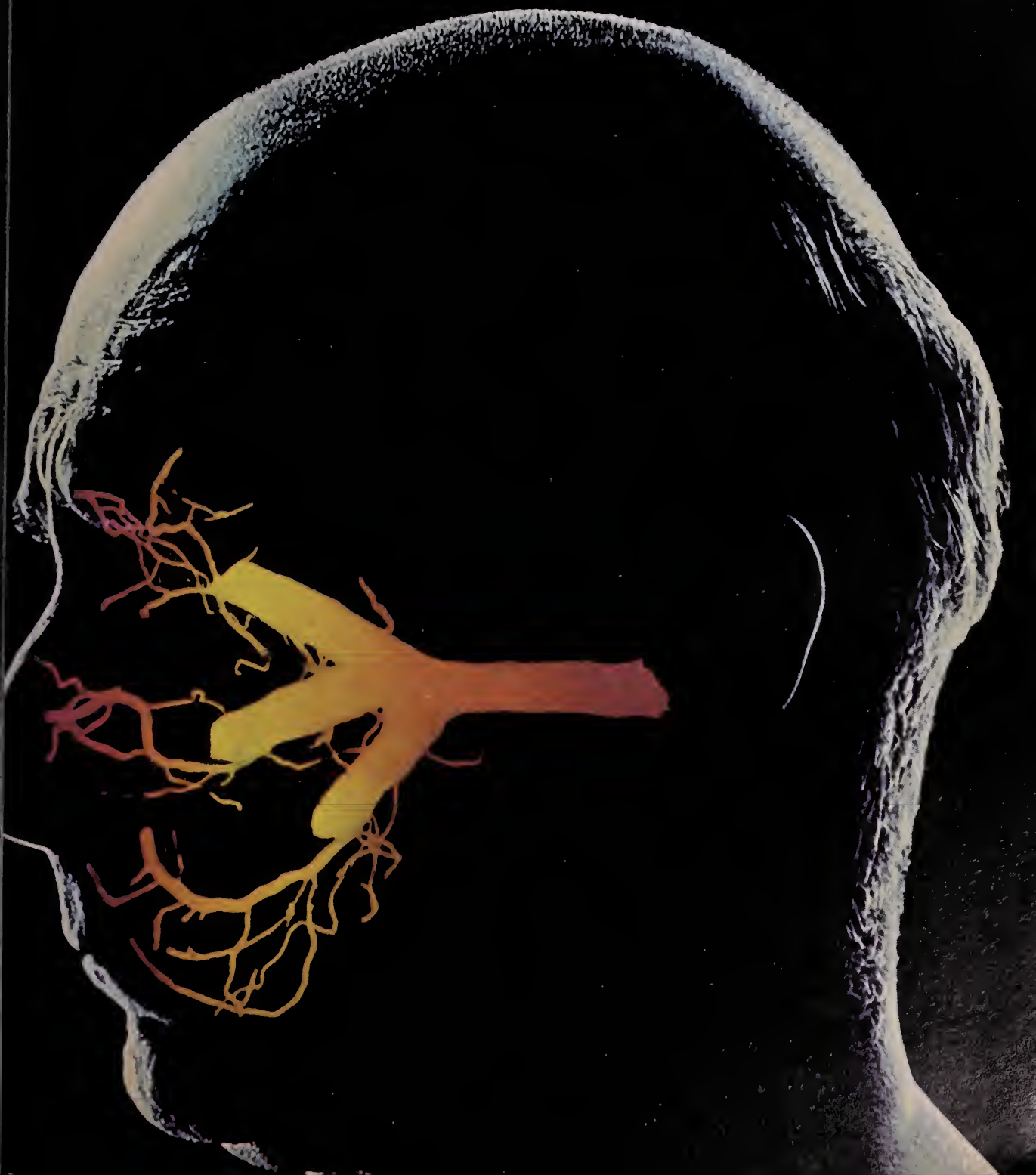
Warning
Fatal cases of aplastic anemia have been reported following treatment with Tegretol. Agranulocytosis, thrombocytopenia and transitory leukopenia have also been observed.
Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.

Indication Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.
Contraindication Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.
Important Note and Precautions Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.
Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.
In pregnancy, the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.
Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect.
Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.
Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.
Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.
Before initiating therapy, the following laboratory procedures should be performed:
1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.
During treatment with Tegretol, the following laboratory procedures should be performed:
1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent laboratory and clinical evaluations. Should this trend continue, the d should be discontinued.
2. Liver function tests must be performed at regular intervals during ment with this drug since liver damage may occur during therapy. Th drug should be discontinued immediately in cases of aggravated live dysfunction or active liver disease.
3. Periodic eye examinations, including slit-lamp, funduscopy and ton etry, are recommended for patients being treated with this drug sinc many phenothiazines and related drugs have been shown to cause e changes.
4. Complete urinalysis and BUN should be done on patients treated Tegretol because of observed renal dysfunction.
Adverse Reactions Dizziness, drowsiness, unsteadiness on the feet, nausea, vomiting, aplastic anemia, transitory leukopenia, agranulocyto eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormalities liver function tests, cholestatic and hepatocellular jaundice, urinary fr quency, acute urinary retention, oliguria with elevated blood pressure albuminuria, glycosuria, elevated BUN, microscopic deposits in the ur impotence, disturbances of coordination, confusion, headache, fatigu blurred vision, transient diplopia and oculomotor disturbances, speech disturbances, abnormal involuntary movements, peripheral neuritis an paresthesias, depression with agitation, talkativeness, nystagmus, tin- nitus, paralysis and other symptoms of cerebral arterial insufficiency, pruritic and erythematous rashes, urticaria, Stevens-Johnson syndrom photosensitivity reactions, alterations in skin pigmentation, exfoliative dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, eryt multiforme and nodosum, aggravation of disseminated lupus erythema tosus, gastric distress, abdominal pain, diarrhea, constipation, anore dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cramps conjunctivitis, left ventricular failure, aggravation of hypertension, hyp tension, syncope and collapse, edema, aggravation of coronary artery disease and congestive heart failure. (Whether these cardiovascular e are drug-related is not known. However, some of these complications resulted in fatalities.) The necessity for discontinuing the drug should dictated by the gravity and severity of the adverse reactions.
Dosage and Administration The drug should always be taken with m if possible.
Initial: One-half tablet (100 mg.) b.i.d. on the first day. Thereafter, the should be increased in one-half tablet (100 mg.) increments every 12 until freedom from pain is achieved. To relieve pain, between 200 mg 1200 mg. per 24 hours may be necessary.
Maintenance: Initial control of pain can be maintained in most patien with a dose of 400 mg. to 800 mg. daily. Maintenance doses may ran between 200 mg. and 1200 mg. daily.
At least once every 3 months during treatment period attempts shou made to discontinue the drug or to reduce the dose to the minimum effective level.
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Use with caution in pregnant patients. Since the drug may cross the placental barrier, adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.

Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypotension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myop skin rashes, urticaria, purpura, necr tizing angiitis, acute gout, and panc titis when epigastric pain or unexplained G.I. symptoms develop aft prolonged administration. Other re tions reported with this class of co pounds include: jaundice, xanthop paresthesia, and photosensitizatic

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USUAL AND CUSTOMARY FEES

In the "professional briefs," page 195, *Medical Economics,* May 13, Dr. Francis L. Land, Commissioner, Medical Services Administration, DHEW, is cited as saying Title XIX legislation "requires two-thirds of a state's physicians participate in the program by 1970 or the state will lose Federal funds" and as suggesting this will prompt states to offer usual-and-customary fees in order to insure sufficient physician participation.

As this statement disagrees with information we have disseminated to the states, and because of *Medical Economics'* profession-wide circulation, we have checked the statement with Dr. Land directly. *The Medical Economics interpretation is not accurate.*

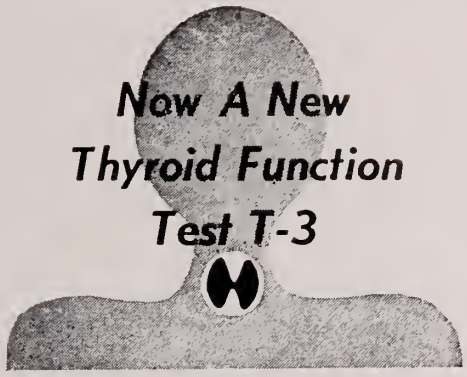
Dr. Land has written to the editors of *Medical Economics* requesting a correction of this item. He has also asked our assistance in getting the correct information to interested physicians. The following excerpt from his letter to the editor relates directly to the published item:

> "The fact of the matter is that nothing in Federal law requires that two-thirds of a State's phyisicians participate in the program by 1970. According to the Medicaid law, States that do not have Medicaid programs in effect by January 1, 1970, will lose Federal matching funds for expenditures for medical care as part of their aid to families with dependent children and the needy aged, blind, and disabled. Although it is necessary for States to foster the participation of enough physicians to make services available to the people who are eligible to receive them, and we encourage the payment of usual and customary fees as an incentive, there is nothing in the legislation that would require the Federal government to withhold financial support from a program that did not pay such fees."

You will recall that participation of two-thirds of the state's physicians is stated in the Handbook of Public Assistance Administration, Title XIX, Section D-5330, as a "Criterion" of adequate participation by the profession. However, this is *not* a hard and fast requirement for approval of a state plan; it is more a rule of thumb for gauging availability of services. A state which *can* show that two-thirds of its physicians are participating will be assumed to be making services sufficiently available —but it may use other methods to achieve this end.

The real requirement is statewide availability of physicians' services to those eligible under Title XIX, not necessarily two-thirds participation.

—James H. Fleming, Title XIX Information Center, American Medical Association.



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1. Scholer, J. F.: J. Nuclear Med. 3:41, 1962. 2. Foeckler, F., et al., Paper, Meet. Soc. Nuclear Med., June 1962. 3. Sodee, B.: Paper, Meet. Soc. Nuclear Med., June 1962. 4. Nordyke, A. M., et al.: Paper, Meet. Soc. Nuclear Med., June 1962.

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Adverse Reactions: Side effects most commonly reported: drowsiness, fatigue and ataxia. Infrequently encountered: confusion, constipation, depression, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo and blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, use of the drug should be discontinued. Because of isolated reports of neutropenia and jaundice, periodic blood counts and liver function tests are advisable during long-term therapy. Minor changes in EEG patterns (low-voltage fast activity) observed during and after therapy and are of no known significance.

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NERVOUS INDIGESTION (SO-CALLED)*

MILFORD O. ROUSE, M.D., *of Dallas, Texas. President, The American Medical Association (1967-68); Clinical Professor of Medicine (Gastroenterology); University of Texas Southwestern Medical School.*

Not Less of the Science of Medicine, But More of the Art

The "American syndrome" — drive, acquire, excel — is characterized by an accelerating tempo of modern life which is definitely increasing the incidence of "nervous indigestion," so-called, or "gastric neurosis," a functional gastrointestinal disorder in which no organic change may be demonstrated. This discussion will exclude functional disturbances reflexly due to abdominal disease outside the gastrointestinal tract or due to systemic disease, as well as those of a purely psychopathic nature. Various writers have estimated that from one-third to as many as two-thirds of the patients seeking medical care do not have any basic or organic trouble, yet they are sick and deserving of the best professional care. Most of these individuals come under the observation of general practitioners and internists, who are amply capable of working out the problems if they intelligently and sympathetically recognize the characteristic symptoms and apply the therapeusis indicated by the individual case.

NATURE OF NEUROSIS

Ross[7, 8] aptly describes a neurosis as a prolonged or continuous state of emotional tension. The symptoms of nervous indigestion resemble the effects of a strong emotion upon the autonomic nervous system. Pleasurable emotions increase peristalsis and secretion within the gastrointestinal tract while unpleasant psychic stimuli decrease these activities. Ross believes that emotional tension may be prolonged for one of several reasons:

(1) A symptom is dreaded either because it is so uncomfortable in itself or because of the consequences which supposedly may result. A common example is palpitation with gaseous eructation and epigastric pain leading to fear of heart disease.

(2) A conditioned reflex may result from association. For example, epigastric distress may occur when eating food that once gave trouble purely by chance.

(3) Symptoms may continue because there is some advantage in the patient's remaining ill. This is not a conscious process. When one is aware of the purpose, such individual is a malingerer; but the true neurotic does not realize his problem, because it is carried on in his subconscious mind. He does not invent symptoms but seizes real minor complaints as a way out of an intolerable situation, with sickness as an excuse or escape. Apparently insoluble situations arise because of the conflicting drives in the mind of the individual. Primary emotions encounter social inhibitions, and the individual fails to make the proper environmental adjustment.

Nervous indigestion is usually found in two types:

(1) Those who early in life find themselves equipped with a nervous system so naturally frail or poorly balanced that it gives way under the strain of even ordinary stresses of life.

(2) Those who set out with a fairly good machine or body, but later break it down through folly, ignorance, or force of necessity because often there are what seem to be unavoidable circumstances developing. Disappointments, misfortunes, unhappiness, or grief may be the exciting factors.

DIAGNOSIS

A good history is still the most important factor in making a correct diagnosis. The equipment of the doctor consists of tact, patience, interest, sympathy, and the willingness to devote ample time to working out the problem. The physician must invite and merit confidence. If he is not willing to put in the proper amount of time, he should be honest enough to send the nervous patient elsewhere. Otherwise he is a contributory factor in making such individuals perpetual floaters.

(Continued on next page)

*Presented at the 157th Annual Scientific Assembly of the Rhode Island Medical Society, at Providence, Rhode Island, May 8, 1968.

While the history is being taken, the patient should be at ease, alone with the doctor, and be encouraged to tell his complete story without interruption. Notes should be taken with caution, especially if the story is along delicate lines. Suggestions should be avoided as much as possible. after the patient's history has been given, the doctor can then carefully search back for evidence of increased nervous strain and past nervous disorders such as insomnia or depression.

Inquiry can be made as to how the patient reacts to sorrow, frustration, or failure. It is well to ask about nervous disorders in the family, including eccentrics, hobos, ne'er-do-wells, alcoholics, neurotics, and those of unstable occupations such as crusaders or altruists. Study into hobbies and "energy out-put" of the patient may be fruitful. Sleep habits often give valuable insight into the autonomic constitution of the patient. Sex life should probably not be investigated at first. It is often best not to probe deeply with one who is obviously in a depressed state. Alvarez[1, 2, 3] suggests that the patient be asked how long since he has worked and why he has not been working. The history taking should often be prolonged into more than one session.

A thorough physical examination is requisite to prove the absence of organic disease. Nervous patients are intelligent and observing, and every reasonable effort must be made to locate demonstrable lesions before an attempt is made to explain the trouble on the basis of a neurosis. It is well to remember that a functional disorder may develop into organic disease or may exist in addition to a chronic ulcer, gallbladder disease, appendicitis, colitis, or definite systemic disorder.

While a painstaking physical examination is being carried on, many intelligent general observations can be made: the state of nutrition; evidence of emotional tension as shown by movement or enunciation: texture, temperature, and moistness of the skin: general intelligence; and habits of hygiene.

In a very broad way, the differential diagnosis between neurosis and organic disease may be summarized as follows:

Neurosis

More common in asthenics.
No lesion demonstrable.
Symptoms vary in nature.
Symptoms vary in intensity in disorderly fashion.
General hypersensitiveness is characteristic.
General fatigability marked.
Responds to general therapy.

Organic Disease

More common in asthenics.
Lesion is present.
Symptoms become progressively better or worse, or remain constant.
Hypersensitiveness not so characteristic.
Fatigability not so characteristic.
Responds to specific therapy.

Alvarez wisely says that one should suspect functional origin when (1) symptoms are not severe, (2) symptoms vary in character from day to day, (3) symptoms continue for years with few if any clear-cut remissions, (4) the patient fails to tell the same story twice the same way, (5) there is no definite complaint of real pain, (6) no definite relation of the distress to patient's intake of food exists, (7) the patient is frail, neurotic, over-emotional, and (8) the patient has been through much stress and strain.

Eusterman[4] adds that the disturbance may be of long duration, yet complications or progressions may be absent and the patient may be in remarkably good nutritional state; that physical disability is frequently marked and entirely out of proportion to the severity of the complaint; and that there is usually present evidence of other stigmata of a psycho-neurotic or hysterical personality.

After a painstaking physical examination, a careful series of laboratory studies should be done to prove the absence of an organic lesion. Among these should be included (1) complete blood count, (2) serologic test for syphilis, (3) sedimentation rate, (4) urinalysis, (5) stool examination, (6) Ewald test meal, (7) proper study of gallbladder function, and (8) gastro-intestinal x-ray with barium enema, if indicated. A gastroscopic observation sometimes reveals a hitherto unsuspected gastritis which has existed in a patient thought to have a gastric neurosis. Some of the best known roentgenologists state that a certain percentage of peptic ulcers and neoplasms of the stomach escape even expert fluoroscopic and radiologic scrutiny.

The scope of this paper does not permit a listing of the multitude of organic conditions to be differentiated. The gastrointestinal tract is a sensitive barometer of trouble elsewhere in the body. Again it should be said that the diagnosis of gastric neurosis is not made by exclusion alone but by certain characteristic symptoms and physical signs.

The intelligent recognition of nervous indigestion is often difficult but is less so than its successful treatment. Here, as in probably no other condition, is required the utmost patience and tact on the part of the physician. The doctor himself must be willing to recognize the nature of gastric neurosis and to put in the rather extensive amounts of time necessary genuinely to help his patient. Rees[6] has said, "There is, however, very often need for a real change in attitude toward these illnesses. There is really no such thing as imaginary illness; we must attempt to give constructive advice and not be

sadistic to our patients because *we* fail in understanding. And we must help them to get away from the conception of a fearsome and untreatable disorder that is conveyed by the old misnomer 'nerves.' We can not and we must not use the word 'neurotic' as a reproach nor have any feeling of superiority to those who suffer from this type of dysfunction."

Lunt[5] has expressed it as follows: "When a self-respecting person is told that the suffering and incapacity he is experiencing is imaginary, he is either going to be made to feel a fool or else he is going to believe the doctor is a fool, and either state of affairs is deplorable."

TREATMENT

The biggest element in treatment is, of course, practical psychotherapy. This may be of two types: (1) Suggestion is an attempt by authoritative reiteration to introduce into the patient's mind any belief which, if accepted, will counteract the fears and beliefs which constitute the disease from which he is suffering. This method is often the more rapid but the less permanent because it leaves the patient dependent and prone to other suggestions. It has no real prophylactic value. It will account for the frequently noted non-specific cures. (2) Persuasion and readjustment or re-education, consisting in explaining the cause of symptoms and the readjustment needed to meet the conflict in a more suitable and successful way. Singer[9] says, "There is only one method of rational therapy and that, time-consuming and troublesome though it may be, is persuasion or education."

The patient must be taught his limits of physical capacity. These patients are intelligent and, when dealt with honestly and kindly, can be made to understand the essential physiology. Environmental problems must be faced and solved or a proper adjustment made. Rest and ample sleep are most essential. All instructions and suggestions should be made practical. Physiotherapy, exercise, and massage are indicated in properly selected cases. All measures which increase the sense of well-being of the patient have a definite value. Abdominal supports should be used with caution, for fear the patient may put too much confidence in purely external measures. Abdominal exercises are probably more helpful.

The diet should be a smooth or bland one. Better results are often obtained by teaching the patient the essential principles of diet than by having him memorize lists of foods to be taken or to be avoided. One should bear in mind possible factors of malnutrition, avitaminosis, hypo-proteinemia from dietary restriction, anemia, and matters of underweight. Insulin in small doses may be given in an effort to increase the appetite and weight, but concentrated vitamin preparations have largely replaced insulin for this purpose. Bowel activity will need attention because most of these individuals have spastic colons, conductive to constipation or diarrhea or alternation between such states. Cathartics should be avoided and enemas used sparingly. Proper habits of timing bowel evacuation are effective.

Drugs are not often needed and should be used cautiously. Those of special value are the antispasmodics, of which the first were belladonna and papaverine. A splendid standard remains a combination of belladonna and phenobarbital, now available in several preparations. In the synthetic group are several preparations which avoid the barbiturates and the atropine derivatives. Sedatives should be used with proper judgment, particularly the barbiturates. Hydrochloric acid, as a digestant, often combined with enzymes, is frequently of value. All concomitant physical disorders should be treated, which, of course, requires good judgment. It is best always to avoid surgery except in emergencies or instances where medical measures have not been effective.

ART OF MEDICINE

The average general practitioner or internist is inclined to feel that he does not have the time that, at first glance, he thinks will be necessary to devote to a patient with gastric neurosis. Interesting studies have been made, however, which show that the total time consumed in working to successful completion a case of gastric neurosis is really much less than that spent in the countless office visits necessary to care for the inadequately treated neurotic patient. It is in the province of every physician to render a real service to his friends and patients by being willing to take the time and the interest to help solve the problem. Not less of the science of medicine, but more of the art, is needed.

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Federal Drug Agency Responsible for Both Safety and Effectiveness

JAMES L. GODDARD, M.D., *of Washington, D.C. Commissioner, U.S. Food and Drug Administration; Assistant Surgeon General, U.S. Public Health Service, Department of Health, Education and Welfare, Washington, D.D.*

One of the more pleasant assignments that goes with the job of commissioner of the food and drug administration is to appear from time to time before professional groups such as the Rhode Island Medical Society to engage in a necessary give-and-take on policies carried out by our agencies. This is, I believe, a mutually beneficial experience, an essential part of the always difficult task of keeping current. Your program for this meeting aptly illustrates that there is nothing fixed or frozen about the art of healing. We know, too, that there is nothing fixed or frozen about the state of the nation's health. And, therefore, there should be nothing fixed or frozen about the policies of an agency whose work is so directly related to the health of the nation and which may influence, as well as be influenced by, the art of healing.

REGULATION

So I would like to talk with you today about several matters of current interest as I see them from within the FDA and as they may be seen by others who deal with our agency. By way of introduction, let me emphasize that the food and drug administration is essentially a consumer protection agency. It carries out its work in a variety of ways and with a variety of tools. One of its tools is regulation. Granted, this is probably our most potent tool. However, with an agency employing not quite 5,000 people and operating on a budget of $66 million per year, you can readily understand that the reliance solely upon regulatory action would engage the agency's resources in endless confrontations with individual companies within the industries we regulate. In my opinion, regulatory action and litigation, were they considered the sole mechanisms of the food and drug administration, constitute a direct path to administrative quicksand. And in that quicksand would be smothered not only the aspirations of the men and women of the agency but, far more significant, the desire of the American consumer to receive that measure of protection which congress has asked the FDA to provide.

RESEARCH

We have many other mechanisms available. Our research program has expanded considerably, both in-house and extra- mural. In addition to projects supported wholly by FDA are those that are sponsored by sister agencies within the Department of Health, Education, and Welfare — the PHS, NIH, and Office of Vocational Rehabilitation — as well as projects carried out by such other organizations as the Veterans Administration and the Atomic Energy Commission, for example.

Through our advisory committees, through meetings of professional organizations, through an invigorated program of industry and consumer education, it is possible for the FDA to accomplish its mission without a total reliance upon the machinery of enforcement. In point of fact, there is a vital third force in the FDA's working environment. And this rather special triangular relationship is one of the matters that I would like to explore with you, for you are a part of it.

TRIANGULAR RELATIONSHIP

At one corner of this triangle is industry; at another corner is the Food and Drug Administration; and at a third corner is the medical and academic world, upon which both industry and government rely very heavily. To pursue the metaphor, if we were actually to draw the triangle there would be a strong solid line between industry and the FDA. But there would be dotted lines between industry and the medical community and between that community and the FDA. this reflects my earlier remarks that our basic, but not exclusive, tool in consumer protection is our enforcement capability.

Yes, the FDA regulates industry. But it does not regulate the practice of medicine or the scientific literature. The FDA's regulation concerning good practices go to the matter of good *manufacturing* practices. Our regulations on new drug applications are quite extensive and quite detailed as to the content of scientific data that must be presented for new drug approval; nevertheless, they are directed to the pharmaceutical industry. Our advertising regulations, also, are directed to industry.

This, then, is the system within which we work. Although approximately two hundred of us in the FDA are doctors of medicine and at one time or

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another did engage in private practice, we deal primarily with producers and marketers to carry out our basic mission of consumer protection in the area of drugs. So if you were to draw the triangle with its solid line and its two dotted lines, you could come up with a rather neat visualization of the industry-government-profession relationships that would satisfy anyone in this audience, I am sure.

But that very neatness would be grossly misleading. Those of you who read the medical press, both the general and the professional journals, are quite aware of the profound changes taking place at each corner of that triangle. Change is certainly the order of the day; the best we can hope for is orderly change.

PHARMACEUTICAL INDUSTRY

Let us, for the moment, look at the situation within the pharmaceutical industry. Since the end of World War II this industry has had phenomenal economic growth. Legislation enacted by Congress during the past decade, and the regulations promulgated by the Food and Drug Administration during the same period, have not adversely affected the pharmaceutical industry; it has remained vigorously blue-chip.

On the one hand, this has given the pharmaceutical industry great new opportunities within our economy; on the other hand, it has attracted to the industry the increased attention of the Congress, state legislatures, and other local, state and federal agencies, besides the Food and Drug Administration. This attention produces some stress. This stress, in turn, frequently produces change which cannot always be predicted or adequately managed.

GOVERNMENT

Now let us consider government. At the government's corner of the triangle there has also been much change during the past few years, change particularly in the way we are organizing and delivering medical services. Legislation proposed by President Johnson and enacted by the Congress over the past three years alone has already changed the nature of governmental support for medical service. And I wish to emphasize that when the Congress of the United States passes legislation establishing regional medical programs, community mental health programs, health professions training, and such massive programs as Child Immunization and Medicare, I submit that the Congress is responding to what the American people see as a basic right in this society — that is, the right to the best possible medical care regardless of one's age, where one lives, how much one earns, or the color of one's skin.

The Food and Drug Administration has had its own reorganization, a fact which, by itself, should startle no one who is familiar with governmental agencies. Reorganization is a fact of bureaucratic life and I guess it always will be. However, it is worth noting that we reorganized not to strengthen the hand of our regulatory compliance bureau or to give more substance to our legal tactics alone, but to bring the agency into closer harmony with the scientific community and the business environment and with the new demands upon government to provide better health service to the people of this country. Thus, we streamlined our Bureau of Medicine. We established a science information facility within a new office of an Associate Commissioner for Science. We have our own data processing organization that operates its own equipment. We joined our research staffs into a single Bureau of Science and established within it a new Division of Pharmaceutical Sciences. The Food and Drug Administration has a much broader role to play within the Department of Health, Education, and Welfare than was imagined as little as five years ago.

MEDICAL COMMUNITY

Let me now turn to the third angle of that triangle I described earlier; the medical and academic community. I will not pretend to know more about the changes within that community than members of this audience know. But I would like to underscore those changes which seem to have relevance to the work of government and industry. For example, the number of men entering general practice is in no way keeping up with the general expansion of our population. On the other hand, there is a lively increase in the specialties of medicine, both in kind and in numbers of personnel. There are new systems of practice. There are bold new advances in technique and technoloogy and an ever growing array of potent drugs.

The developments taking place in each of the three corners of the triangle do not occur in isolation. Of course, the interrelationship between government, industry, and the profession may not always form an easily discernible pattern, but it is real, nonetheless. And I believe it is vital that each of us have the best possible understanding of the meaning and the implications of the changes that occur in those other corners of the triangle we share. In short, we must communicate with one another, freely and frankly.

COMMUNICATION

The art of communication, however, like the art of healing, is not a precise science. I had not been in the FDA very long before I discovered that communication — the necessary exchange of useful information among clinical investigators, basic researchers, practicing physicians, and industry and government — was not being accomplished effectively or efficiently at all. One could cite various

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examples of the "communications gap," but I would like to discuss only one aspect of this problem that is of special interest to me and of special importance to you. I am speaking of prescribing information on the drugs available to patients today and those yet unknown preparations which will be coming onto the market in the years ahead. If we cannot disseminate efficiently all of the information about a drug that the physician must have to permit its safe and effective use, the value of the drug is diminished. Indeed, a lack of information, or a failure to utilize available information for whatever reason, can even unnecessarily risk the health of a patient. The well-publicized situation with chloramphenicol comes readily to mind in this connection.

What is the source of accurate prescribing information? As you know, there is a great deal of information that the FDA holds in its files but cannot by law reveal. But there is an important piece of information which we can and are required to reveal, something termed "final printed labeling." This final printed labeling is presently required to accompany the drug in or on its package. All promotion by direct mailings and by journal advertising is based upon it. The volumes of clinical experience gathered over spans of time lasting seven, nine, ten years and longer, the actual patient-by-patient and clinic-by-clinic case studies of a drug as it moved from investigational status to approval for use in clinical practice, the meticulous data on manufacturing controls, chemical composition, and other data required by law — all of this material is submitted to us by the drug's sponsor for evaluation.

LABELING

The last document to be submitted to our agency prior to approval of a new drug is the final printed labeling, which is the drug sponsor's own evaluation of his product, how he would like it represented to the medical community, and how he believes it can be safely and effectively employed by that community.

Let me point out that we do not initiate the writing of final printed labeling, just as we do not initiate the production of any new drug. However, we are responsible by law for the approval of what goes in the labeling that will describe its safe and effective uses to the profession. And this should properly be a distillation of all the volumes of data that are part of the NDA file. The labeling contains not only the indications, contraindications, warnings, hazards, and side effects, but may include a bibliography of clinical reports as well, plus some additional information on actual patient experience with the drug, related in either actual numbers or in percentages.

And this is how the process of communicating the value of a new drug to the doctor really begins. It is a small beginning. The type is small. The paper is thin, thin enough to be folded many times and then inserted into a small package. And the information may seem too thin.

This last judgment is, of course, relative. But it is relative to the changes in each corner of the triangle. The rate of research and development within the drug industry is accelerating, let us put aside for now any arguments about the quality of the research or the purposes, medical or economic, but let us admit that a great deal of research activity is being generated, activity which, in all candor, does tend to outdate final printed labeling for some drugs within a short period of time. In fact, it is not unusual for a company to return to the FDA for a change in its approved labeling before the first year of that drug's place in commerce has been completed. This may result from a newly found advantage of the drug or a newly found hazard.

Physicians' experience with the drug as reported to colleagues, to hospital pharmacy and therapeutics committees, to the drug company, or to the FDA will also bring about changes in the labeling through the supplemental process. So it should be clear that all three parties directly involved in drug therapy — industry, government and the medical practitioner—do influence drug prescribing information in a continuous and broad fashion, in order for all three to have as current a final label as is possible.

DRUG SAFETY

Even as this kind of continuous change is in process with this drug or that drug, however, we are on the threshold of a vast re-ordering of the labeling of drugs that came onto the market after 1938 and before 1962. As you all know, I'm sure, the Food, Drug, and Cosmetic Act of 1938 required that new drugs must be approved by the FDA and that these drugs would be approved only if demonstrated to be safe for use by man. Simple, basic, raw safety was the essence of our first major law in this area. The 1938 law with its safety provision hardly stifled the development of new drugs. About 3,600 of these new drugs came onto the market during the next quarter of a century plus many times that number of similar drug products. So, in the course of 24 years, we might estimate that as many as 17,000-18,000 drug products entered the marketplace foor the alleviation of pain and the elimination of disease.

At least, that was the general idea. But the single dimension of safety was not adequate for identifying a drug. The physician could reasonably ask, "all right, this drug is *safe*. But will it do for my patient what I want it to do and what its man-

ufacturer says it will do?" This is a justifiable question and it had to be answered.

DRUG EFFECTIVENESS

In 1962, Congress by a unanimous vote passed the Kefauver-Harris drug amendments to the Food, Drug, and Cosmetics Act. The main feature of these amendments was simply this: From then on any new drug that came onto the market had to be proved not only safe but effective as well. It had to answer the doctor's fundamental question about effectiveness of claims.

Since 1962, therefore, the Food and Drug Administration has approved for interstate commerce only those drugs that have withstood the clinical trials for safety *and* efficacy. However, the historic amendments also provided that the criterion of effectiveness should be applied to all those drugs that came onto the market between 1939 and 1962 as well.

Among my first acts as Commissioner of Food and Drugs was to gain the help of the National Academy of Sciences — National Research Council for what has since come to be called the drug efficacy study. The academy is a private institution, but chartered by the Congress a hundred years before those drug amendments were passed. Its purpose is to provide non-governmental expertise to the solution of scientific problems plaguing this or that governmental agency.

It has the ability to do what government agencies, such as the FDA, for example, cannot do: to reach into the scientific and academic communities and gain the assistance of top experts who can render judgments free of any real or imagined pressures. And the reports as they have been coming in attest to the expertness of the panels: They are clear, they cite highly reliable references and sources, and they draw upon the prior work of industry's top scientific and medical personnel.

EFFICACY REVIEW

When we had our large orientation meeting on the efficacy review last January, Doctor R. Keith Cannan, representing the academy, noted that 237 different pharmaceutical firms had submitted the labeling claims for 3,600 different drug formulations. Because many of these drugs have multiple labeling claims, Doctor Cannan reported that "something like 10,000 independent therapeutic judgments will have been made when the task is completed" by the 30 panels of experts the academy brought together.

It must be remembered, too, that for every drug product that went to the academy, we estimate that there are about five "me-too's" in the marketplace. So we are not talking about a modification in our national drug supply involving only 3,600 products. We are talking about changes involving as many as 16,000 different products.

The findings of the academy are flowing into our agency and we are taking all the steps necessary to insure that these findings are translated into regulatory language that is in the spirit of promoting "honesty and fair dealing" in the marketplace, as our basic statute, the Food, Drug and Cosmetics Act, instructs us to do. We are very concerned that this be an orderly process and that it not be disruptive either to the practice of medicine or to the drug industry as a whole. But above all, I must tell you that we are moving forward on this project in the same spirit in which it was begun: To bring about more rational drug therapy by influencing the development of a more rational drug supply.

During the rest of this year, the results of the academy will come in to us, will be processed by our medical and regulatory personnel, and published in the *Federal Register*. But this is only a beginning step. We cannot simply assume that as the label claims for drugs are changed as the result of the academy review that physicians will know about the changes and adjust their prescribing habits accordingly. This could be the case if doctors had some efficient way of getting all the information they need about all the drugs available. But they don't.

PACKAGE INSERT

At the present time, as you know, the primary means for disseminating drug labeling is the package insert. It's been a complaint for many years that the insert doesn't often get to the doctor who must write the prescription; instead it goes to the pharmacist. More recently, we have discovered that even if the insert went to the doctor, it might not be up to date anyway. During the last week of March of this year, we collected samples of a number of drugs at the retail pharmacy level together with the package inserts that accompanied them. These drugs were dissimilar except for one factor — the labeling for each had been revised a year or more previously. Changes included new contraindications, additional side effects, new warning statements. But many of the drug samples were still carrying the old labeling, and this, let me repeat, was a full year and more after the revisions were made. This limited, random sampling was carried out for information purposes only. But it was another indication that the package insert is not the fastest, much less the most efficient, medium for transmitting prescribing information.

I believe it is clear that the concept of final printed labeling cannot be compromised. The law requires that a statement of what is known about the drug, how it can best be used for the conditions recommended, be made available to the physician, that it be a fair and honest statement, and that

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it reflect the best medical and scientific judgment concerning the safe and effective use of that particular drug at that particular time. When these requirements are met, then the labeling acts as an aid to the orderly processes of change that are occurring within the practice of medicine. But there is also a need to find a better form of labeling, a better interpretation of the final printed labeling, than we have at hand now.

DRUG COMPENDIUM PROPOSED

This is why we are taking yet another step that will, in time, contribute greatly to a more efficient drug information system. I am speaking, of course, of the proposed United States Drug Compendium. The compendium was included in President Johnson's health message to the Congress on March 4. The President said: "To make sure that doctors have accurate, reliable and complete information on the drugs which are available, *I recommend that the Congress authorize this year publication of a United States Compendium of Drugs.*

"This compendium would be prepared by the Secretary of Health, Education, and Welfare, in cooperation with pharmaceutical manufacturers, who would bear the cost of its publication, and with physicians and pharmacists.

"It will give every doctor, pharmacy, hospital, and other health care institution complete and accurate information about prescription drugs — use and dosage, warnings, manufacturer, generic and brand names, and facts about their safety and effectiveness."

The drug compendium is not a new idea. It has been discussed quite seriously by the medical profession and the drug industry since early in this decade. Many physicians, myself included, were long ago convinced that a compendium would be of great help to us in our work. In 1966, when I became Commissioner of Food and Drugs, I talked over this matter with representatives of the AMA and the Pharmaceutical Manufacturers Association, among others. The PMA expressed interest, but also noted the many "problems" that a compendium might present.

I agree that there may be problems, but in light of the overall problem of getting the best information to the physician as soon as it becomes available, in light of that overriding problem, I just could not see the Food and Drug Administration retreating from a position of leadership. So, two years after my personal plea to private medicine and private industry to take the lead, we have in the Congress today the President's proposal. Senator Lister Hill and Representative Harley O. Staggers are sponsoring the compendium legislation. I urge each of you to write these gentlemen for a copy of the bill, to study it, and to see if it does, as we maintain it does, bring an additional element of good sense and order to our health system.

QUARTERLY REVISIONS

I believe the President's proposed United States Compendium of Drugs will be reviewed by the Congress this year and enacted into law. It makes sense medically. With the quarterly updating that we envision, it would be possible to get to the practicing physician the information he needs much sooner than he is is getting it now. And he would get it on time, regardless of his geographical area of practice. And he would get the information updated regardless of the volume prescribing practices of his colleagues.

I think the proposal will pass because industry cannot afford the estimated $6 to $7 million they now spend on the package insert for prescription drugs, and then very possibly pay for recalling improperly labeled drug lots. Something has to give. It cannot be the welfare of the patient. It cannot be the professional judgment of the doctor.

But it *can* be the archaic organization of drug information. We *can* get rid of the inefficiencies that now exist. To do any less is to compromise what we have all wanted — better ways and better means of professional health care.

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THE THIRD ISRAELI-ARAB WAR: JUNE 1967*

The Pattern of Casualties as Determined by the Strategy of the War

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We are not aware of a paper in the American medical literature on the management of casualties in the Arab-Israeli Six Day War. We are pleased to reprint this account with the permission of the publishers and the author.

. . . The Editor

The third Middle East war started on 5 June, 1967 and the cease-fire occurred less than 6 days later. In fact, victory by Israel was assured within 6 hours, and the entire campaign will go down in history as one of the most brilliant military achievements of all time. The organizational aspects will most certainly be used as a model for any campaign that may take place in the future, including the organization and function of the Medical Corps in the treatment and evacuation of the wounded. The lessons to be learned from this experience will be of importance not only in any future similar problems in Israel, but also in South Africa, where the geographical and political picture bears many aspects of resemblance.

In order to understand fully the statistical implications of the casualties, it is necessary in some measure to appreciate the tactical methods utilized by the army combat forces.

THE AIR FORCE

The Air Force played a leading part in the early stages of the campaign, whereby the exquisite training of the pilots was assisted by the element of surprise. In order to destroy as many of the enemy aircraft as possible before they could be built up into an effective fighting echelon, it is obvious that the Israel Intelligence Corps played a very efficient and important part because the position of the enemy air fields and the numbers of aircraft, radar and communications set-ups were well known. It was also known that unconventional weapons such as missiles, and poison gas of at least 3 varieties (neurotoxic, mustard and tear gas), were in the possession of the Arabs and would have been used if they could have done so to their advantage. It was necessary, therefore, at an early stage not only to destroy the effective fighting power of the Arab Air Force, but also to destroy its ability to attack civilian centres with poison gas.

In this regard, the Egyptian forces in the Sinai Desert were to be given the highest priority for combat, followed by the forces of Syria, which were equally vicious opponents, but less numerous. Lebanon was never really considered as a worthy opponent and it was hoped that Jordan would keep out of the conflict, as her antipathy to both Egypt and Syria was well known.

The primary Israeli attack, therefore, was centered on Nassar and his Egyptian Army, for it was he who started the war by ordering U Thant to withdraw the International Peace-keeping Force from his borders, by illegally closing the Straight of Tiran to Israeli shipping, and by inflaming his fellow Arabs with violent speeches, threatening Israel and all her people with complete destruction. Egypt had been fully supplied with nearly 4 billion dollars worth of Russian armaments in the air and on the ground, and the Russian fleet was standing by in the Mediterranean off the Israeli coast as an observation station.

The habits of the Egyptians were well known and for some time before the war started, sorties by their Air Force were carried out at regular hours, and it was even known at what time the crews sat down to breakfast. The Israeli Air Force had similar sorties including combat exercises over the Mediterranean area, also at regular times, well knowing that Russian information ships were keeping the Arabs well informed of Israeli movements.

On 5 June, the Israeli Air Force carried out the usual manoeuvres over the Mediterranean, but instead of going back to Israel, they swept in towards Egypt, skimming the sea so that they could not be caught by Egyptian radar. When they arrived over Egyptian soil, the enemy had no idea of their presence and they were able to bomb and rocket every intended strategic target, while the Egyptian pilots were having coffee. The result was catastrophic for the Egyptian Army, as over 400 planes were destroyed in this way with very little air opposition,

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although the anti-aircraft fire was intense. The rocketry and bombing by the Israelis was so accurate that, for a long time, it was considered that Israel had a secret homing device, for not only were dummy planes ignored, but every plane bombed was hit in a vital spot with almost no ancillary craters left in the vicinity. The truth of the matter is that the Israeli planes came in low and slow, and because of the excellent training and the complete disregard for anti-aircraft fire without taking evasive action, absolute accuracy was assured. In this way, all the airfields as far out as Luxor were put out of action, including the important communication centres.

Considering the magnitude of the task, the Israeli Air Force losses were relatively slight — 19 pilots were shot down, and they saved themselves from incineration in the plane by using the ejector seat. About half of these pilots were captured and some of them brutally lynched, but the rest were rescued by a remarkable helicopter service, even in the midst of the fighting area, in order to bring them back alive. This was assisted by a device used by the pilots as soon as they landed, to signal their position to the helicopter service. Round-the-clock sorties by the Israeli Air Force continued, in order to destroy the remnants of the Egyptian forces and to dispose of the Syrian Air Force as well. Jordan had been warned by Israel not to come into the war, but Jordan disregarded this warning as an evidence of weakness and after making a pact with his sworn enemy, Nasser, Hussein ordered the shelling of Jerusalem. Thereafter, the Jordanian Air Force was destroyed as well. After this it was obvious that by obtaining complete mastery of the air, Israel was also master of the situation on the ground.

In spite of the importance of the air arm, I saw no casualties at the hospitals requiring plastic surgery, in contra-distinction to World War II, where air power was equally important and where the pilots had no easy methods of ejecting themselves. Many of these World War II pilots were, therefore, severely burned and constituted in numbers, in the long term, the greater percentage of the casualties requiring reconstructive surgery. The absence of pilots' burns in the Third Israeli-Arab war took a considerable load off the skilled personnel in the various Plastic and Reconstructive Centres.

THE ARMOUR BATTLES

The armour battles between Israel and the combined forces of Syria, Jordan and Egypt were of vast dimensions, particularly in the Sinai Peninsula, where encounters greater than those of Alamein or Stalingrad took place. It is astonishing that, although the Egyptians (who had equipment of superb quality, including the Russian Tiger tanks) outnumbered the Israeli forces, they should have been so thoroughly routed by an army inferior in numbers but vastly superior in intelligence, courage, drive and training. War in the desert must needs be restricted to a certain extent by the strain on the supply lines which have to carry water to the troops and fuel to the tanks, although large quantities of fuel had been secreted in the desert by the Egyptians and were later captured by the Israelis. The Israeli Army had the benefit of short supply lines and mastery of the air which, to a great extent, neutralized the deficiency in their numbers. Equipment and battle tactics of the Egyptians were supplied by the Russians and, therefore the Israeli Army could predict what the Egyptian reactions would be in certain circumstances, owing to the rigidity of the training. The flexibility of the Israeli tactics was another factor in the war and accounted largely for their success.

In a general way, the Egyptian tank groups were expecting attacks on their flanks, which would be the natural method of approach and to counter this the Russians had worked out a method whereby the enemy could themselves be outflanked on each side and crossed by an enfilading movement. The Israeli attack, however, did not conform with the Russian textbooks as the Israelis spearheaded right into the centre of the Egyptian tank mass, driving through it and splitting it up, thus reversing the position. This technique is reminiscent of the tactics of Nelson at Trafalgar, in that he attacked the French and Spanish fleets across the Straits of Gilbraltar by sailing from the Bay of Tunis in 2 columns, splitting the enemy into 3 sections and thereby disrupting their commands and smashing the individual units. The same approach by the Israelis in the desert led to the same results.

Another feature of great importance was the training of the tank gunners, who were extremely accurate and wasted no shells. One important characteristic that had an obvious bearing on the Israeli success and also on the casualty picture, was the fact that the Israeli tank commanders discarded the use of the periscope. Instead of fighting with the closed hatch, they stood up through the open hatch so that they could survey the whole scene of battle and could signal commands clearly. This had its advantages so far as their battle capabilities were concerned, but the commanders were terribly vulnerable and many of them died, including senior officers. At this point it must be mentioned that the word for *Advance* does not exist in the language of the Israeli Army — they use the words *Follow me,* and literally this is the reason why the proportion of officers to men killed in action was extremely high, probably as much as 50 per cent. Many of these tank commanders were killed instantly by direct hits, and others by flying shrap-

nel. It would appear obvious at this moment that if this is to be the technique of the fighting of the Israeli armoured divisions, some measure of protection should be given to the tank commanders, either by wearing a shield on the upper part of the body (as did the knights of old, but made of lightweight plastic rather than of metal) or, alternatively, to have some form of plastic protection around the top of the hatch. The open-hatch technique has also served as a method of protection for the men when the tank is on fire, as it enables them to leave the burning tank quickly without severe injury and without being incinerated, as might occur if the hatch were not opened in time.

Burns formed an appreciable number of the injured, the extent of the burn varying according to the type of missile and the accuracy with which the tank had been hit, the Napalm (phosphorus) bomb being particularly destructive on this account. The majority of burns that I observed, however, were of a flash type, and as the tank crews were able to leave the tank in a short space of time, with few exceptions the burns were confined to skin destruction only. The drivers of the tanks were particularly affected, and these men had burns on the backs of the hands and on the lower part of the face, as the eyes and ears were protected by goggles and ear phones. This indicates clearly that when going into combat, tank crews should wear mittens or half-gloves whereby the dorsum of the hand and fingers could be protected, allowing for free movement and for perspiration of the palms. To protect the face, the use of an ointment would be worth trying, even if it would inevitably be caked with sand and dust, although the discomfort of sweating under such a carapace may preclude its use for any length of time. It would be necessary to try out this method of facial protection under simulated war conditions before its final adoption.

PARATROOPS AND INFANTRY

The paratroops and infantry formed a considerable part of the Army, essential for rapid manoeuvre, particularly in mountainous areas. These troops were used essentially in Syria and Jordan, where not only was the terrain in many instances difficult for tank warfare, but the Arab armies were also so well dug into the hills which they honeycombed with bunkers and interleading passages, and were protected by thick layers of concrete, that air attack and artillery were of little value in subduing them. These required infantry on the borders and paratroopers further inland.

In observing the battlefields, particularly the hills overlooking Galilee and the Judean hills overlooking Jerusalem, it appeared to be an impossible task for any army to get past these defences. The fact that the enemy was overpowered in such a short time was due entirely to the training and courage of the Israeli soldier. The old city of Jerusalem was captured by these men because, unlike the Jordanians, the Israelis did not use artillery as they wished to preserve the holy places.

Except for those who have religious convictions, every Israeli youth is inducted into the army for at least 2½ years' training, during which time the polyglot inhabitants of Israel learn the Hebrew language and the discipline of army routine. They are toughened up by vigorous exercises of the commando type and are expected to undergo training relating to any aspect of war that they come across. Particular stress is placed on the rescue of the wounded, for no wounded Israeli soldier must be left lying in the field. Each soldier is expected to carry a person at a run for several hundred yards or to carry him, walking, for about a mile. He is expected to be able to walk for long distances with a full pack and to do without sleep for days on end. He is trained to live under battle conditions in the heat of the desert, and in swamps. He is also taught to overcome any form of terrain that he might come across, and to utilize his grenades and arms in a skilful way in attacking bunkers and redoubts.

This has produced a well-disciplined army of tough soldiers who, by virtue of perseverance and resilience are able to overcome an enemy fighting well, but with less reserve of tenacity. Here again, the casualties amongst the officers were statistically very high as compared with the all-round figure. Most of the casualties were due to mines and shrapnel, and therefore were mainly orthopaedic in nature, and it appears that over 60 per cent of the casualties in the hospitals were of this type. Although explosives caused damage in bunkers and unexpected places, I saw no instances of the booby-trap type of injury utilized in Abyssinia by the retreating Italians during World War II, when the South Africans were instrumental in putting Haile Selassie in Addis Ababa. In that campaign a large number of South Africans lost both hands and often their sight in picking up small objects such as fountain pens and cameras which were left lying around as booby-traps. The fact that they were not planted by the retreating Arabs was probably due to the precipitate race back to their capitals, and also possibly due to a certain lack of ingenuity. A large amount of recontructive surgery of the face which had to be carried out in World War II was conspicuous by its absence in the present war. The number of maxillo-facial injuries was rather small, being confined to a few gunshot wounds of the face and direct hits, and the only mid-third facial crash injury was seen in a woman who fell down some steps in the blackout. It is, therefore, obvious that in a short, sharp war of this nature, the planning behind the lines for medical and surgical

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treatment has to take into consideration all the military factors involved.

THE ISRAELI NAVY

The Israeli Navy played a very important part in the early hours of the war. Not only were 2 Egyptian submarines spotted and destroyed, but frogmen were brought into the Bay of Alexandria, where they partially disabled the Egyptian Fleet, including Russian missile ships. The part played by the Navy lasted for a short duration and casualties were almost non-existent, although 6 frog men were taken prisoner.

A factor that, fortunately, did not play a part in this war was the use of poison gas. Poison gas caches were discovered in large quantities in the Sinai Desert (where they were being manufactured on the spot) and also in missile bases towards the rear. The loss of the Egyptian Air Force may have been an important factor in reducing Nasser's potential in this regard, but the most probable reason was a threat by Israel that should Nasser use gas, reprisals far and wide by the Israeli Air Force would more than compensate for any damage caused by such gases over Israeli towns and in the forward areas. All major hospitals had gas decontamination areas ready and a number of beds was put aside in expectation of such an attack on civilians particularly.

THE MEDICAL SERVICES

The medical services of the Israeli Army require particular mention, not only for the efficiency with which the wounded were treated in the forward areas and brought back by helicopters and other rapid means of transport, but also because of the organization of the training of doctors and other personnel. An important factor in this organization was the development of combat surgeons' kit and equipment for forward hospitals, in a way that left no loopholes. Every doctor in the Army was given a 4½-months' course in traumatology and the best of the young doctors were sent up to the forward areas together with their medical orderlies, to deal with the injured on the spot. This caused a rather high casualty rate amongst the medical men, but enabled them to send back the wounded in an excellent state, free from shock, and with well dressed wounds. The courage and efficiency of the helicopter service in this regard has been praised by every arm of the service, for they often picked up the wounded far behind the enemy lines and brought them to safety. Ambulances were made out of domestic trucks by a design whereby a complete chassis of an ambulance was clipped onto a standard truck within a matter of minutes. In some areas buses were also used as ambulances, having been designed to carry out this military function, so that the change-over was affected in a minimum amount of time. The surgeons in the rear hospitals were all impressed with the condition of the patients, even those severely wounded, as this necessitated a minimum amount of resuscitation work in the hospital itself before active treatment of the injuries was instituted, e.g. a number of the wounded were evacuated from the forward areas with tracheostomies.

Although of short duration, it was a total war in its organization. In the base hospitals, every type of human endeavour was used to treat the casualties quickly. This included the use of young boys and girls who became stretcher bearers and orderlies in spite of the terrible sights and heartbreaking impressions they must have had. None of them broke down under the strain which went on for days, and because of the call-up of all man-power to the fighting forces, postal and similar domestic services were carried out by the schoolchildren, so that every single member of the populace felt that he was participating in the war effort, leading to a psychological unifying effect beyond description.

SUMMARY

The surgical lessons to be learned from this conflict are:

1. All medical officers in the Army are given an intensive course in traumatology. This could well be followed in South Africa and specific lectures and demonstrations in traumatology could be applied as part of the undergraduate course in medicine. Treatment in the field by trained doctors in Israel was often better than treatment in the Casualty Departments of a great number of civilian hospitals elsewhere.

2. The fact that a wounded man was never left lying on the field of battle for any length of time was a tremendous morale booster for the fighting men.

3. Immediate skilled treatment and rapid evacuation of the wounded soldier saved many lives. It was remarkable to see the number of tracheostomies that had been performed in the field as life-saving measures. It is now the intenion of the Israeli Medical Corps to replace tracheostomies as far as possible with intubation efforts right from the forward areas, as it is considered that it would be easier to transport the patients in this way and to enable bleeding wounds of the throat and neck to be packed at the same time.

4. A close study of combat injuries should always be made. For example, the use of gloves or half-gloves for tank crews would certainly have eliminated most of the burns which they had sustained.

No mention has been made of the value of specialized centres for specific injuries requiring reconstructive surgery, e.g. burns, hand surgery, maxillo-facial units, etc. In principle, this method

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MALPRACTICE: MORE CLAIMS, HIGHER AWARDS

A Report Prepared with the Assistance of the Law Division of the American Medical Association, and Submitted by the Board of Trustees to the AMA House of Delegates for its Information at its Meeting in San Francisco, June, 1968

Since World War II professional liability has become a matter of growing concern to the medical profession. There is an increasing tendency of the public to sue doctors, and jury awards are higher and more frequent. Inflation has been responsible for larger payments for claims, judgments, legal defense and insurance premiums.

Glowing descriptions in the lay press of the discovery of new "wonder" drugs and "miracle" surgery often have been exaggerated, leading the public to expect perfect solutions to most medical problems. The highly developed skill of modern physicians is, ironically, one of the principal causes of malpractice claims. It is now possible to treat many diseases and conditions which formerly were untreatable, but the techniques involved are sometimes inherently hazardous and complex and give rise to increased possibilities of error, mishap and injury.

The public accepts certain ills as incurable. However, in those areas where cures are normally obtained, many patients immediately blame the physician if results are not entirely as expected. Furthermore, some patients believe that the physician can now guarantee results, a belief which, unfortunately, some physicians encourage and others fail to correct. When the expectation of successful treatment is not fulfilled, the patient is prone to seek redress for malpractice.

LAW OF MALPRACTICE LIABILITY

Although professional liability is a frequent topic of discussion among physicians, the doctor unfamiliar with the law may not understand the legal basis of malpractice liability. Many physicians equate a charge of malpractice with reckless, irresponsible, or inexcusably poor treatment which causes injury to the patient. Such conduct is obviously malpractice, whether viewed by doctors or the courts, but legal liability for malpractice also includes the mistakes that even diligent and competent physicians sometimes make because human beings are not infallible. Despite a widespread belief that there is no malpractice if the patient's injuries are due to "human error" or an "honest mistake," this does not always preclude a finding of malpractice when legal criteria are applied. There is no liability for an "honest mistake" involving an incorrect diagnosis not attributable to lack of skill or knowledge, but there is a liability if the "honest mistake" is due to a temporary human failing on the part of a competent physician to apply ordinary skill, even in an isolated instance.

In substance, the law requires a physician at all times to apply the skill and knowledge of the average or ordinary practitioner in his field. As long as he uses ordinary skill he is not liable if his diagnosis proves to be incorrect or his treatment unsuccessful. This appears to be a simple rule but it is easily misunderstood. Although the law demands only ordinary skill, a physician is subject to human fallibility and will sometimes perform services of less than standard quality. There may be times when he is lost in abstraction because of personal affairs, or his reflexes may be dulled by overwork, lack of sleep, or some unidentified cause.

A physician is not a robot that performs with uniform efficiency; sometimes his performance may exceed that which reasonably may be expected and sometimes less. In the absence of irresponsible reckless conduct, the medical profession may excuse individual instances of "human error" or an "honest mistake." The law, however, demands a standard of ordinary skill at all times. Fortunately, substandard services do not always result in injury. When they do, the law holds the physician accountable.

CONTINGENT FEE LEGAL SERVICES

The availability of legal services for a contingent fee has had major impact on the incidence of malpractice claims. The ordinary claimant either cannot afford or is unwilling to pay legal fees for litigation with an unpredictable outcome, but he is usually willing to employ an attorney on a percen-

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tage basis. Under the customary arrangement the lawyer representing a malpractice claimant agrees to accept as his fee a fixed percentage, varying from one-third to one-half of the amount recovered, if any. The percentage agreed upon may depend upon such factors as the difficulty of the case, the size of the claim, the prospects of winning, the reputation and skill of the attorney, and whether the case is disposed of at the claim or trial stage or in a court of appeals.

If he is unable to obtain a settlement for his client or if he loses the case, the contingent-fee attorney will not be paid for his services. In theory, this loss is offset by the fees he gets from other clients when he is successful. Considering that personal injury verdicts exceeding $100,000 are no longer rare, a plaintiff's attorney with a reputation for winning lawsuits can enjoy a highly lucrative income.

Since he is paid only when he wins, the "big name" personal injury lawyer is discriminating in the cases he takes to trial. A high proportion of his cases is referred by other lawyers, who receive one-quarter or one-third of the fee for their referrals. He avoids championing lost causes, except where there is the opportunity to satisfy his desire for "public service" or publicity. Malpractice claims have become a more attractive gamble in recent years, and every case that is won in court is an incentive to accept cases involving borderline liability.

With better prospects for favorable verdicts and larger awards, the best talent in the plaintiffs' bar has been drawn into the arena of litigation against physicians and hospitals. They fight hard, and they are knowledgeable in medicine and how medicine is practiced. They vie with one another in a spirit of camaraderie and gamesmanship for precedent-setting verdicts, publicity, and the professional admiration of their peers.

Continuing legal education has sharpened the tools and expertise of the plaintiffs' lawyers, just as continuing medical education has improved the practice of medicine. Meetings of the American Trial Lawyers Association include trial demonstrations and lectures by physicians and attorneys in handling malpractice litigation. The lawyers who lecture are seasoned trial men, eager to talk about their victories and to teach newcomers. Besides ATLA, other bar groups such as the Practicing Law Institute, and even law schools, have sponsored seminars and conferences in the techniques of preparing and trying malpractice claims. A two-day program devoted exclusively to medical malpractice was attended by more than 2,000 attorneys at the University of Michigan.

TREND OF COURT DECISIONS

Although the vast majority of malpractice claims is still successfully defended, the trend of court decisions favors claimants. In part this undoubtedly is due to the improved expertise of plaintiffs' counsel, but defendants' attorneys, too, have been sharpening their skills. There is no evidence that the trend against physicians is caused by increased carelessness in the practice of medicine. On the contrary, ways and means to protect the safety of the patient have kept pace with other scientific advances. The primary responsibility appears to lie with the courts, which are becoming increasingly liberal in expanding the scope of compensable personal injury from all causes.

The generosity of courts and juries in granting liberal awards to injured plaintiffs stems from the prevalence of liability insurance. For example, judges and jury members know that automobile drivers carry liability insurance and that the burden of paying a judgment for damages ordinarily will fall upon the insurer, and not upon the defendant. Thus, the costs of injury tend to be divided among all who use automobiles. The same reasoning also influences the disposition of malpractice litigation.

In helping plantiffs to recover the courts have relaxed established procedures governing malpractice trials. To overcome the difficulty of plaintiffs in obtaining expert medical witnesses, courts in many jurisdictions now permit the use of medical textbooks as evidence to establish a deviation from standard practice. In many states, the statute of limitations has been interpreted to begin, not with the date of injury, as is customary in other personal injury actions, but with the date of the discovery of the injury by the plaintiff. Physicians from outside the local community may be brought in to testify about the standards of medical practice. Also, a number of courts has become more liberal in recognizing situations in which negligence on the part of the physician is presumed and in dispensing with the need of the plaintiff to produce expert medical testimony to support his case.

EFFECT ON PATIENT CARE

Some physicians, particularly those who have been sued, have stated that the growing incidence of claims tends to reduce the quality and increase the cost of patient care. They believe that physicians are becoming wary of undertaking risky, heroic measures in the treatment of patients for fear of being sued if they are unsuccessful, and that unnecessary and costly x-rays and laboratory tests are being made to confirm findings already known, simply in self-protection. In rebuttal, plaintiffs' lawyers say that malpractice litigation is a socially desirable influence in compelling professional proficiency. They point out that physicians are not the only professional group being sued and that

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Editorials

THE NURSING CRISIS

The changing picture in nursing education is highlighted on the local scene by the decision of the trustees of the Memorial Hospital in Pawtucket, Rhode Island, to discontinue its nursing school. A similar fate recently befell the respected school at Sturdy Memorial Hospital in neighboring Attleboro, Massachusetts. In both of these instances the demise was the result of rapidly diminishing classes. Hospital nursing schools are expensive to operate. The expense cannot be justified for classes of a few girls.

Yet this is only one aspect of the problem. The shortage of nurses despite an increasing number of graduates in the country as a whole remains critical. In the face of this shortage there is a determined campaign to do away with hospital schools of nursing. As early as 1941 the late great Doctor Frank H. Lahey wrote: "I have been fearful for a number of years that the trend in nursing is away from service to the patient and too much in the direction of higher education. I have been fearful lest the higher and higher standards of requirements for entrance and graduation in nursing might not make it more and more difficult to retain a sufficient number of nurses to meet our increasing demands. This is an apprehension which our present situation as relates to nurse shortage indicates as being more and more justifiable." This was in 1941! In 1947 he pointed out the accuracy of his prediction and added: "While everyone agrees that the care of patients is greatly handicapped by the shortage of nurses, there does not seem to be any immediate prospect of the situation being bettered." These words are unfortunately valid today.

There is evolving at the present time a system of three educational programs: 1) two year associate degree course, 2) three year hospital training school diploma program, and 3) four year baccalaureate degree in nursing. Many nursing educators strongly advocate the elimination of the hospital programs in favor of the other two. Some important hospital nursing schools have been transformed into baccalaureate programs, such as those at the Beth Israel and Boston University Hospitals in Boston, now both affiliated with universities. In Rhode Island baccalaureate programs are offered by Salve Regina College and the University of Rhode Island, while two year programs are in prospect at Rhode Island and Roger Williams Junior Colleges.

There are still several strong three year programs in Rhode Island. Should these be preserved? Last fall the Council of the New England State Medical Societies passed a resolution deploring "any movement to restrict nursing education in our hospitals," and urged "that nursing education in hospitals be continued; and that subsidies (Federal if necessary) be provided to keep them going."

This inspired a rather vigorous response from Miss Edna M. Otto, president of the Rhode Island League for Nursing. She stated in a communication to the Council: "The quotation from your group implies that doctors have no interest in any other form of educational preparation for nursing. . . ." She added: "We feel that it is critically shortsighted and unrealistic for doctors to support this form of nursing education to the complete exclusion of the two more contemporary patterns, that is baccalaureate and associate degree programs."

We do not believe that the resolution had any such intention. The bulk of practicing bedside registered nurses, however, have come, and are still coming, from the three year hospital schools. The purpose is to support financially those that are doing a good job. It is foolish to throw out the baby with the bath.

In an excellent paper titled the "Clichés of Nursing Education," Doctor Thomas Hale, Administrator of the Albany Medical Center Hospital, after refuting some 20 clichés on which he believes the present trend is based, concludes: "The present shortage has been artificially produced (not necessarily intentionally). It can be overcome if national and state nursing organizations will reverse their present policy and give strong support to diploma schools of nursing, accept a one year internship for graduates of two year community colleges, and restrict the baccalaureate programs to the graduates of hospital schools and associate degree programs."

While this may be a somewhat extreme view, it nevertheless is an authoritative opinion and one worth heeding. The better hospital diploma schools in nursing still have a viable future and an important role to play.

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FLEX

The first Federation Licensing Examination (FLEX), which has been in the development stage for more than seven years, will be administered June 18-20.

About 2,500 applicants are expected to be examined during 1968. This is the first time that a single examination for medical licensure has been prepared and is being administered for licensure in more than one state. The number of states participating is not known at this writing.

The Examining Institute Committee of The Federation of State Medical Boards of the United States was responsible for researching and developing the examination, and the National Board of Medical Examiners served in an advisory capacity and provided the questions.

In years past many physicians wishing to relocate and practice medicine in another state were required to be re-examined by that state. This has proved to be a constant source of annoyance. It is hoped that FLEX will not only correct that and similar problems, but at the same time achieve uniformity in licensing examinations, equivalent levels in the examinations, and improvement in the quality of examinations.

"Eligibility for the examination will be limited to those who have completed or nearly completed one year of internship or other graduate training as approved by the state board with the provision that the requirement of one year internship or graduate training may be waived in 1968 only, in any state where circumstances require. It is conceivable that the period of this waiver might need to be extended," the Committee stated.

The 3-day, 21½-hour test, which is administered by members of the state boards, will be repeated December 10, 11, and 12. For security's sake, it has been decided to conduct it on the same three days throughout the United States. Scores will be reported directly to the participating states, which will then have the option of interpreting them as they see fit.

This is a welcome cooperative endeavor.

AEROMEDICAL EVACUATION

Published elsewhere in this issue is a paper by Jack Penn of Johannesburg, South Africa, describing the benefits of helicopter evacuation of casualties in the recent Arab-Israeli War. Colonel Spurgeon Neel, MC, USA, has reported[1] similarly on the experience in Vietnam, where the mortality among wounded admitted to hospitals has been a remarkable 2.3 per cent. Army aeromedical evacuation procedures in Vietnam provide that no soldier is more than 35 minutes away from a facility capable of giving resuscitative life-saving treatment.

Colonel Neel raises the question of whether helicopter ambulance service may not be adaptable to civilian emergency programs. Its value in sparse rural areas seems to be self-evident. The ability of helicopters to cross obstacles such as distance, natural barriers, and traffic appears to make it an attractive means of evacuation for crowded freeways and rush hour traffic as well. Its value in a compact city-state with an arterial throughway, such as exists in Rhode Island, is a matter for speculation. Perhaps our set-up would offer special advantages for this type of evacuation. Experiments in other areas should certainly be watched closely, so that we may judge if our accident incidence warrants the considerable expense involved.

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MILK INTOLERANCE

Multiple gastrointestinal complaints may be associated with malabsorption of milk sugar, lactose. These symptoms result either from osmotic derangements or from fermentative end products which cause diarrhea and cramping. When the syndrome develops, it is frequently possible to demonstate a deficiency of the enzyme lactase in the intestinal mucosa. A recent report by Shi-Shung Huang and Theodore M. Bayless in *Science** has reconfirmed previous reports of an incidence of five to ten per cent of milk intolerance in the adult white population, a higher percentage in Negroes, and an incidence in healthy Oriental adults in the United States of over ninety-five per cent. A decrease of the enzyme lactase in the intestinal mucosa occurs with advancing age in all races. The severity of symptoms at any age is related to the amount of milk consumed. An adult may be able to tolerate a glass or two of milk a day, whereas a quart will produce symptoms.

The minimum daily requirement in the adult necessary to supply an adequate amount of calcium to avoid osteoporosis is two glasses of skim milk per day. Hence one cannot arbitrarily condemn milk for the adult, but rather must judiciously evaluate gastrointestinal complaints if milk intolerance in any individual is suspected. The widespread use of milk and cream in the treatment of the ulcer patient may paradoxically result in secondary symptomatology from the increased milk consumption.

Milk intolerance is well-known to gastroenterologists. Every patient with chronic gastrointestinal complaints, especially abdominal cramps and diarrhea, can be easily studied by a lactose tolerance test similar to a glucose tolerance test. The oral lactose is enzymatically rapidly converted to glucose, which is measured in the blood at half hour intervals, similarly to the standard glucose tolerance test. The fact of increasing milk intolerance in the older patient must be kept in mind by every physician.

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PULMONARY HOME CARE

Extended care for the chronically ill has for too long been costly and despairing. Any intelligent attempt at a solution through the combined efforts of a hospital, a voluntary insurance program, and health officials is to be commended. The cost of chronic care often can be compensated for by the compassionate concern of those for whom the life counts. The capacity of the laity to become truly specialists in a specific chronic care situation, when instructed and coached by specialized personnel, is amazing, and very reassuring. The expertise of patients and families after learning how to give chronic care has been clearly demonstrated in several centers in the case of patients with chronic renal disease who have required continuing dialysis. Comparable competence in chronic pulmonary disease should be expected.

The patient who is a respiratory cripple from emphysema or pulmonary fibrosis has required for his care a team of professional technicians, and frequently for an extended term has occupied a bed in a special care unit where complicated scientific equipment is best handled.

The directors of both Rhode Island Medical Society Physicians Service and Blue Cross of Rhode Island have shown good judgment in recognizing that the expense of a home care program may be largely offset by freeing hospital beds and reducing the costs of procedures by utilizing the services of the patient himself and of his family. An on-the-job training program in the home will be provided through visits as necessary by trained personnel.

The care of the chronic pulmonary patient, which of necessity is a long-term continuing process, can be solved only by returning the patient to his own home and providing for him in that familiar environment the technical facilities which will make his life and that of his family tolerable. It appears that everyone will gain from this wise solution, since it is logical, humanitarian, and economical.

A FEE MORATORIUM

Sidney I. Simon, an economist on the faculty of Rutgers University, has cautioned that prevailing fees may not necessarily be usual, customary, or, more pertinent, reasonable. Although he personally distrusts prevailing fee programs, he voted in favor of experimenting with prevailing fees by New Jersey Blue Shield. He argues, however, that we must proceed with caution in the interest of the patient. Doctor Milford O. Rouse, President of the AMA, and Doctor F. J. L. Blasingame, Executive Vice President of the AMA, have both in different contexts emphasized the responsibility of the physician in helping to keep down the costs of medical care —fees being a cost over which physicians have direct control.

Anne R. Somers, whose book (written with her husband) on the impact of Medicare on hospitals, is reviewed elsewhere in this issue, has recently been quoted as advocating a moratorium on doctors' fee increases. She argues that physicians have a selfish interest in doing this, if they are in the long run to keep the federal government from taking over control of fee levels.

Whether these varied cautions are merely the mouthings of doom callers or the wise words of knowing experts may be a matter for speculation.

It seems to us, however, that reasonableness and forbearance on the part of the medical profession in the inevitable and necessary long-term escalation of fees is not only necessary, but emphatically in their own best interests.

BROWN MEDICAL DIGEST

The Brown University Medical Science Program has been operating for five years. It is an expanding effort that is beginning to touch Rhode Island medicine at many points. New faculty have arrived on campus and in the hospitals, students have begun to attend medical meetings, and a biomedical building is now taking shape on Meeting Street on The Hill. But Rhode Island's practicing physicians have as yet had little contact with the yeasty ferment of this new enterprise. The visibility of Brown medicine has been low for those of us preoccupied with daily rounds. Our information has been mere fragments from colleagues, the newspapers, and the University.

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The Brown Medical Digest has now appeared, the number one issue dated May 1968. The new publication to be issued at regular intervals is designed to keep friends of Brown informed about the Medical Science Program. Mailed separately is a Calendar listing dates and places of events of interest to the medical community. The first issue outlines the medical science curriculum at Brown, introduces Doctor Pierre Galletti as chairman of the Division, and notes that Brown has raised $9-million of the $17-million sought for its Biological and Medical Science Program. The information is indeed timely, factual, and interesting to the whole medical community.

Brown promises to be the scientific hub of medical practice in the State. We are pleased to hear from her and to welcome this new vehicle of communication between the faculty and the practitioners.

FRANKENSTEIN

The computer age has arrived. The news media and magazines are full of stories of the feats of these complex machines. The space age was made possible by the advent of the computer. Medical journals have increasing numbers of papers on the use of the computer in medical practice, hospital procedures, and medical research. There are said to be over 40,000 computers in the United States, and the number is growing at a great rate. The mind boggles at the thought of a machine going beserk in the course of caring for a patient.

This idea is not wholly beyond the realm of possibility. A recent story in the Wall Street Journal describes what happened in a wholesale grocery business when a computer went awry. One customer who ordered a case of cereal received a room full. Another customer got five, ten, or twenty times the goods he ordered. The computer turned out bills with erroneous prices, for example, charging $200 for a case of sanitary napkins that should have cost $13. The machine almost put the man out of business.

He sued the computer manfacturer and won a $53,000 damage verdict against the corporation. It appears that the programming technician hadn't properly checked the programming before releasing it for use.

Now that a legal precedent has been established regarding liability in the use of computers, will the doctor whose patient may have been harmed by a faulty computer be liable for damages or malpractice?

THIRD ISRAELI-ARAB WAR

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should be adopted wherever possible in order to concentrate skilled personnel and specialized equipment in one spot. In this war, however, due to the paucity of cases requiring maxillo-facial care and the fact that 4 excellent Reconstructive Units were established in Haifa, Tel Aviv, Jerusalem and Beersheba, it was decided that no specific separation of duties would be necessary. Orthopaedic Departments were available in other hospitals such as Afula, Poreia, Safad, Hedera, Ashkelon and Sarafand. Rather than deplete these hospitals and overload the central bases, it was decided that specialists from Plastic Surgical Centres should be available to assist the orthopaedic surgeons to carry out such orthopaedic and hand reconstructions as might be necessary in their own areas.

Flexibility, depending on the types and numbers of casualties, is, however, important in order to organize the best methods of procedure with speed and efficiency. In this regard, the directives of the Israeli Army Medical Services deserve every commendation.

Clarendon Centre, 4 Park Lane,
Parktown, Johannesburg, South Africa

MALPRACTICE

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there is also an upsurge in claims against lawyers, accountants, engineers and architects.

No significant corroborating evidence is available to substantiate either view, and perhaps this is not an area in which generalizations should be made. The specter of suit may deter some individual physicians who might otherwise be tempted to undertake treatment involving excessive risks or treatment which is beyond their competence. Self-protection may motivate others to confirm findings already believed to be known. This may increase the cost of patient care, but it can be argued that the additional cost is justified if even on rare occasions the result is a change in diagnosis that contributes to saving the life or health of the patient.

Exposure to professional liability is an occupational hazard. To some extent the risk can be controlled if the physician treats each patient as he would want a member of his immediate family treated. Despite such efforts, the prospect is that the problem will become more acute until a more efficient and equitable legal system for resolving claims is devised to protect the interests of both the physician and the public.

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THROUGH the Microscope



MEDICAL EDUCATION PROGRAM AT DARTMOUTH REVAMPED

The Board of Trustees of Dartmouth College has approved plans for the Dartmouth Medical School that will significantly reshape the pattern of medical education here and possibly serve as a model for medical schools throughout the country. Under the new program, subject only to the availability of necessary new financing, Dartmouth, one of the nation's oldest medical schools, will return once again to awarding the M.D. degree as it did prior to 1913.

The board was encouraged to take action at this time by four recent major gifts to Dartmouth's Third Century Fund totaling $4,250,000 and designated for the Medical School. Plans for making the school a pioneer in the area of modern medical education have been under study by the medical faculty since Dean Carleton B. Chapman assumed leadership of the school in September, 1966. The recent major gifts, however, have made it possible to advance implementation of the plans.

Rupert C. Thompson, Jr., of Providence, chairman of Dartmouth's current capital gifts campaign to raise $51 million, described the four gifts as follows:

1. A gift of $1,750,000 from an anonymous alumnus, for increased teaching facilities at the Medical School. This is the largest single contribution ever received by Dartmouth from a living alumnus;
2. A gift of $1,500,000 from a man and his wife who are friends of Dartmouth with a particular interest in medical education, for construction of a teaching-research building;
3. An anonymous grant totaling $750,000 consisting of $650,000 endowment for a chair in medicine and $100,000 for medical scholarship aid, both elements conditional on the College raising an additional $100,000 for each area from other sources; and
4. A gift of $250,000 from Mr. James C. Chilcott '20, to construct a teaching auditorium-laboratory in the new medical facilities planned for the school.

Dean Chapman stressed that although the proposed Dartmouth program will involve an enlarged school it is primarily designed to respond to today's rapidly accelerating demand for broadening, upgrading, and shortening the total span of education for medicine.

Current estimates indicate there is a national annual need for 10,000 new physicians just to replace normal attrition due to death and retirement. By 1975, Dean Chapman noted, the need will have grown to 15,000 annually, reflecting demands for broader and improved medical care. Today, U.S. medical schools are graduating about 8,000 doctors each year.

Core elements of the Dartmouth Plan are (1) shortening the time required to produce doctors from the beginning of college to the granting of curriculum.

Simply stated, the plan would admit a student to the Dartmouth Medical School after three years of undergraduate education (with some exceptional students possibly entering after two undergraduate years). The Medical School would operate on the basis of an 11-month academic year.

The first two years of study under the plan would comprise (1) a revised basic science curriculum, (2) an introductory series in clinical medicine, and (3) closely coordinated work with Arts and Sciences departments to provide continuation of college work in a variety of fields. The clinical experience would be made up of one year each of clerkship and internship, the latter being planned and operated by the Medical School rather than by the hospital.

Under the Dartmouth Plan, the nine years traditionally required to traverse the system from the beginning of college to completion of internship will be shortened to seven for most students and to six years for exceptional students, with a few students requiring eight years.

According to Dean Chapman, implementation of the plan at the Dartmouth Medical School is phased during the next six years to result in a total enrollment of 168 students in 1973-74, 64 in each of the first and second years, and 20 each in the third and fourth years. Currently there are 95 students in the two-year Medical School.

(Continued on Page 465)



Let's be specific about Campbell's Soups... and *reducing diets*



There are more than 30 million people in America who are overweight. During the next year, you probably will see more than 1,000 of them in your own practice.

One good way to help these patients is to give them a reducing diet based on ordinary eating patterns.

Campbell has prepared a sensible plan for weight control based on ordinary eating patterns. The plan consists of a patient instruction booklet and a set of menus which provide approximately 1,200 calories daily. The menus are balanced to provide the minimum daily requirements of nutrients.



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itching
discharge
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For the most widespread form of vaginitis the most widely successful therapeutic agent, Flagyl, is clearly indicated.

In trichomonal vaginitis, most physicians have reported a cure-rate of 95 per cent or more with Flagyl when infected male partners are treated concurrently and when treatment is repeated for occasional refractory infections in women.

Among the few patients who do not respond to Flagyl are those who may not have taken the prescribed dosage and those who may have been reinfected.

This high rate of cure obtained with Flagyl is unparalleled. Only systemically active Flagyl reaches the hidden reservoirs of reinfection in male and female genitourinary tracts.

Indications: Flagyl is indicated only in the treatment of trichomoniasis in both the male and female.

Contraindications: Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution: Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side effects: Infrequent and minor side effects include nausea, metallic taste and furry tongue. Gastrointestinal disturbances, flushing and headache sometimes occur, especially with concomitant ingestion of alcohol. The taste of alcoholic beverages may be altered. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness or paresthesia of an extremity, joint pains, confusion, irritability, weakness, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

Dosage and Administration: In women: one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.

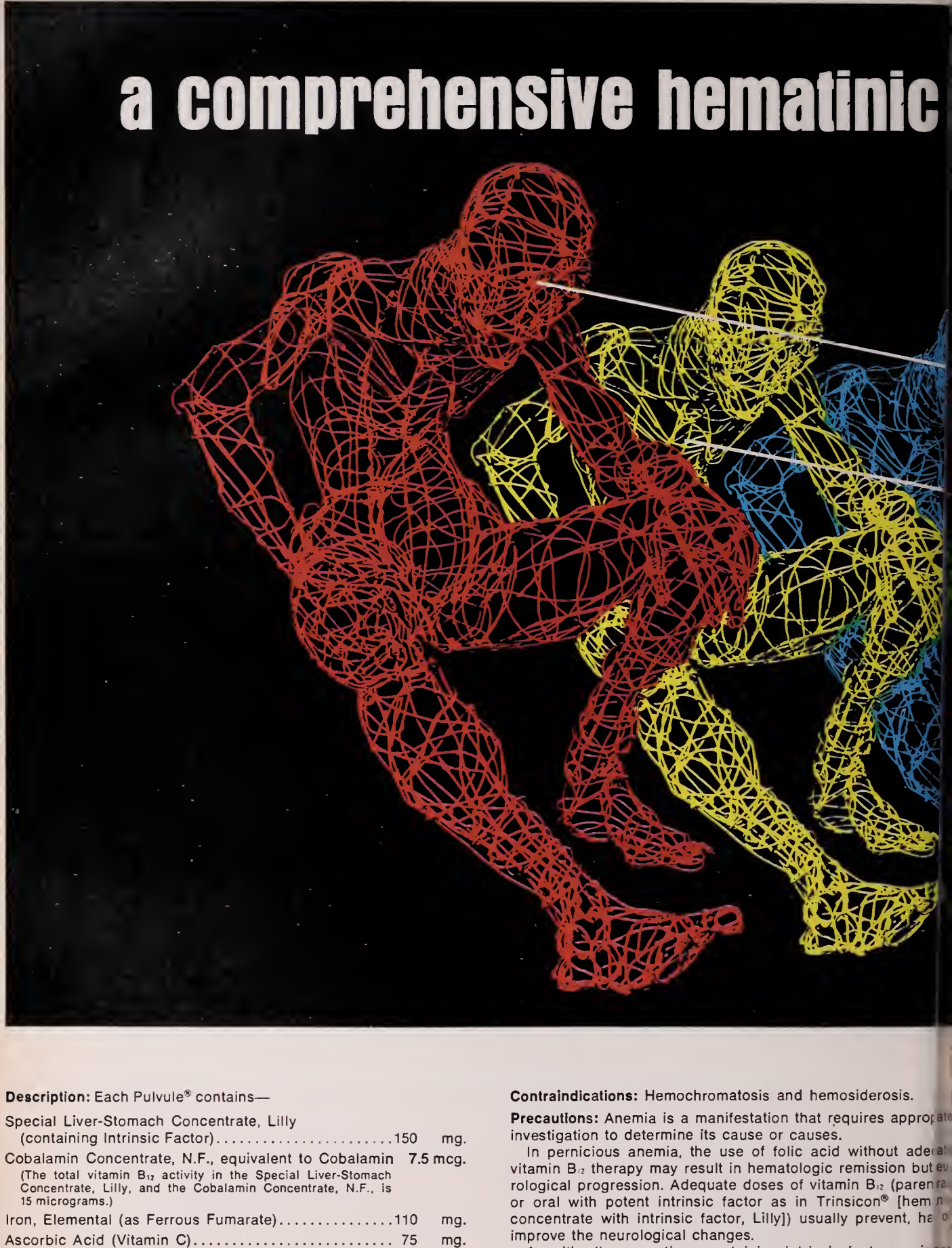
In men: When trichomonads are demonstrated, one 250-mg. oral tablet twice daily for ten days in conjunction with treatment of his female partner.

Dosage Forms: Oral tablets—250 mg.
Vaginal inserts—500 mg.

SEARLE

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a comprehensive hematinic



Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150	mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin (The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	7.5	mcg.
Iron, Elemental (as Ferrous Fumarate)	110	mg.
Ascorbic Acid (Vitamin C)	75	mg.
Folic Acid	1	mg.

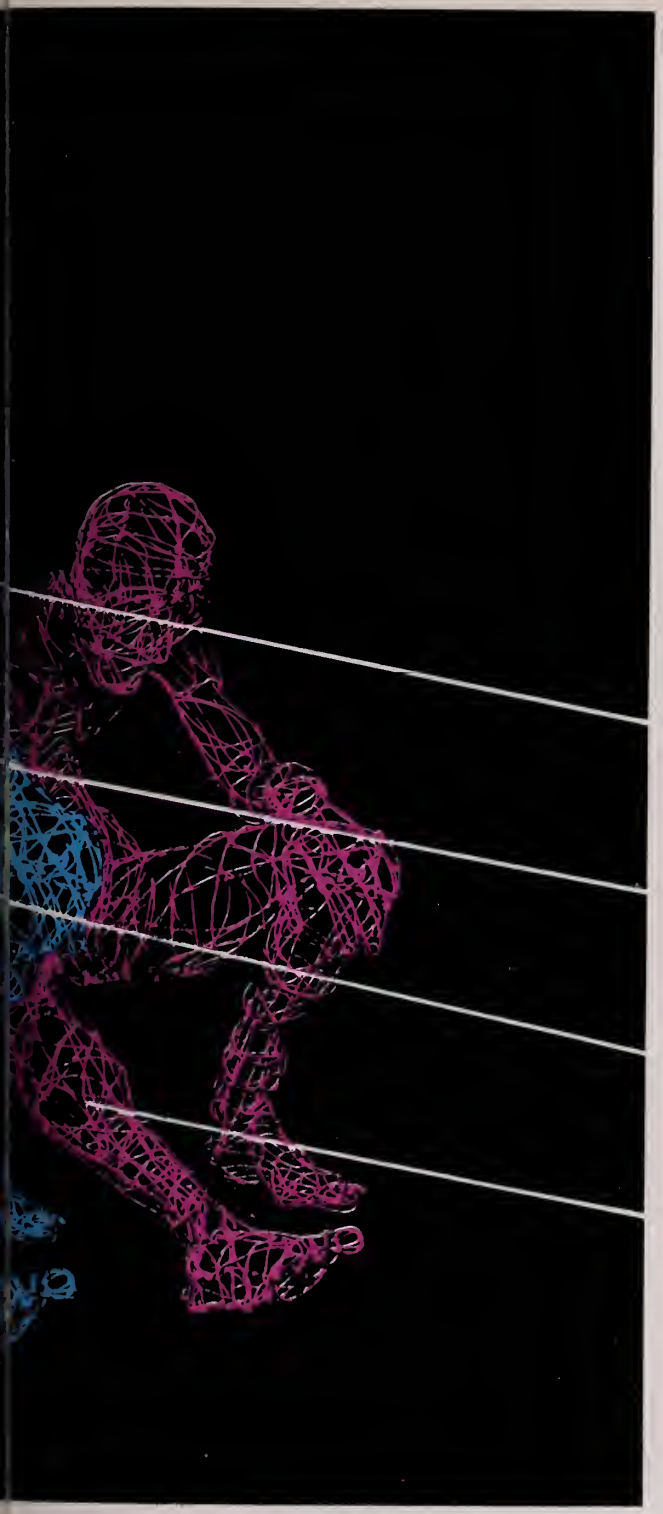
Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

Contraindications: Hemochromatosis and hemosiderosis.

Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

In pernicious anemia, the use of folic acid without adequate vitamin B_{12} therapy may result in hematologic remission but neurological progression. Adequate doses of vitamin B_{12} (parenteral or oral with potent intrinsic factor as in Trinsicon® [hemin concentrate with intrinsic factor, Lilly]) usually prevent, halt or improve the neurological changes.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary. No single regimen fits all cases, and the status of the patient observed on follow-up is the final criterion for adequacy of therapy. Peri-



You can treat combined deficiencies with

Trinsicon®

—the multifactor hematinic

Vitamin B_{12} plus intrinsic factor (15 mcg. B_{12} activity)—helps provide adequate levels of this important vitamin.

Folic acid (1 mg.)—treats nutritional macrocytic anemias and/or malabsorption syndromes.

Ascorbic acid (75 mg.)—augments the conversion of folic acid to its active form and helps iron absorption.

Iron (110 mg.)—treats hypochromic anemia.

nical and laboratory studies are considered essential and are ommended.

verse Reactions: In rare instances, iron in therapeutic doses duces gastro-intestinal reactions, such as diarrhea or constiion. Reducing the dose and administering it with meals will imize these effects.

n extremely rare instances, skin rash suggesting allergy has owed oral administration of liver-stomach material. Instances apparent allergic sensitization have also been reported after l administration of folic acid.

sage: One Pulvule twice a day. (Two Pulvules daily produce a ndard response in the average uncomplicated case of pernius anemia.)

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Additional information available to physicians upon request.

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sounding ingredients
When they need fas
relief from pain, yo
can reassure them t at
aspirin is still the
strongest analgesic th
can buy without your
prescription. And
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In peptic ulcer: the antacid puzzle



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aluminum and magnesium hydroxides *plus* simethicone

"will it ease the pain?"

Mylanta helps relieve ulcer pain with the two most widely prescribed antacids: aluminum and magnesium hydroxides.

will it help "my gassy stomach"?

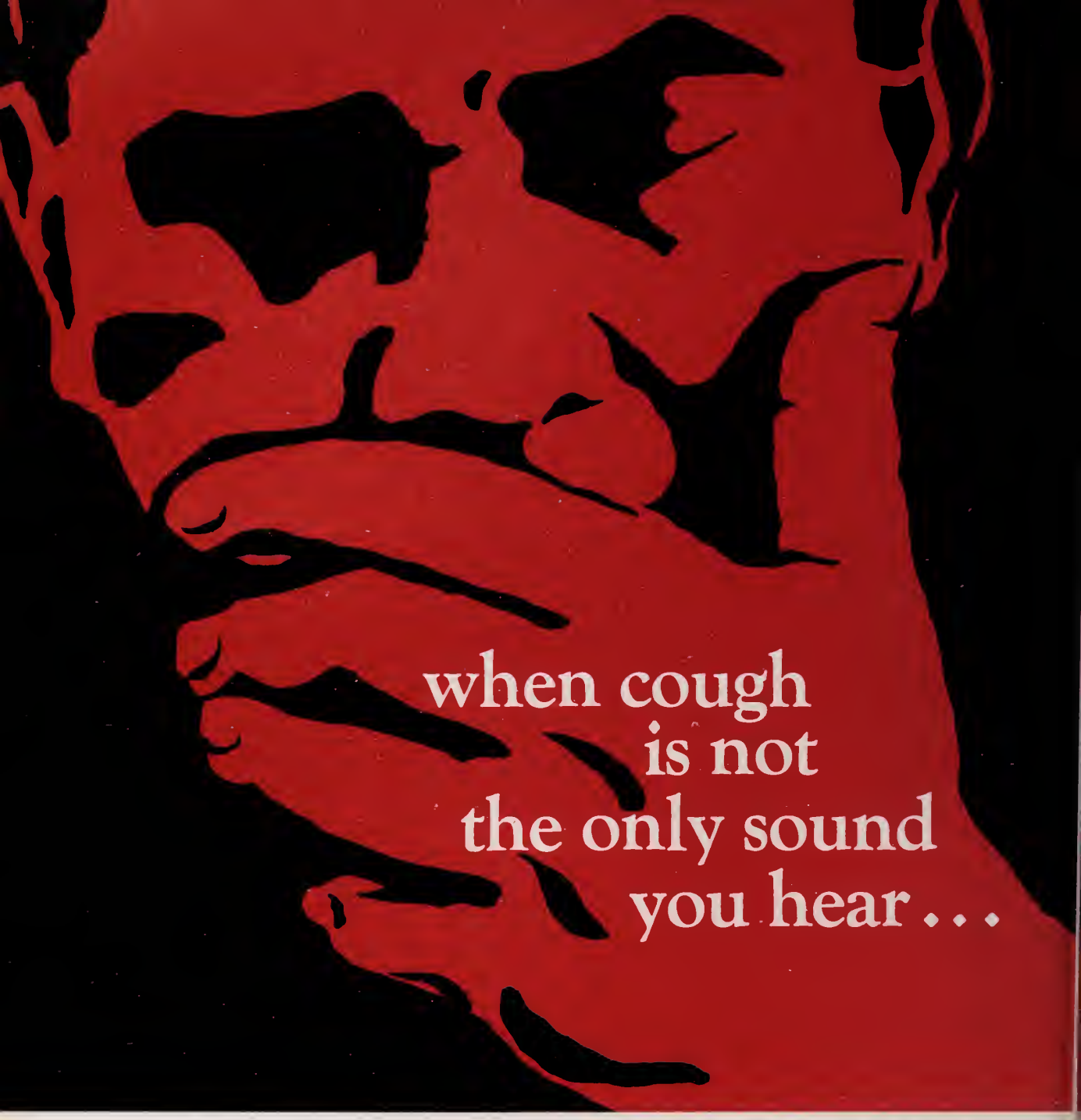
Mylanta *also* contains simethicone: for concomitant relief of G.I. gas distress.

"will this one taste O.K.?"

The *prolonged* acceptance of Mylanta was recently confirmed in 87.5% of 104 patients—after a total of 20,459 documented days of therapy.* *Danhof, I. E.: Report on file.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. *Dosage:* One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

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. . . **because** OMNI-TUSS is indicated for cough associated with upper respiratory tract infections, bronchitis, bronchiectasis, bronchial asthma, emphysema, sinusitis and rhinitis, hay fever, or other allergic conditions. Any of these conditions may exhibit the general symptom syndrome—coughing, wheezing, bronchospasm, and tenacious mucus—which may benefit from the antitussive, bronchodilative, antihistaminic, and expectorant action of Omni-Tuss.

The therapeutic usefulness of Omni-Tuss is enhanced by a unique resin complex formulation providing the clinically desirable advantages of: (1) uniform drug availability throughout an extended period, (2) 8 to 12 hours of symptomatic control, (3) minimal dosage requirement, (4) minimal side effects.

Economical, efficient **b.i.d.** dosage—extremely well-tolerated by children, 6-12, and adults.

'Omni Tuss' Suspension: Each teaspoonful (5 cc.) contains 10 mg. codeine (Warning: May be habit-forming), 5 mg. phenyltoloxamine, 3 mg. chlorpheniramine, 25 mg. ephedrine, all as cation exchange resin complexes of sulfonated polystyrene, and 20 mg. guaiacol carbonate.

Available on prescription only. Class X exempt narcotic. Permissible on oral prescription.

Dosage: *Adults:* 1 teaspoonful (5 cc.) q12h.
Children (6-12 *years*): ½ teaspoonful q12h.

Side Effects: Minimal, but when encountered may include jitteriness, nausea, drying of mouth, insomnia, constipation, which disappear upon adjustment of the dose or discontinuance of treatment.

Precautions and Contraindications: For complete detailed information, refer to package insert or official brochure.

Strasenburgh

Strasenburgh Laboratories Division
Wallace & Tiernan Inc., Rochester, N.Y.

THROUGH THE MICROSCOPE

(Continued from Page 464)

The Dartmouth Plan is based on the conviction that it is the business of the Medical School to train a student so that he can move either into research and academic pursuits or into medical practice, recognizing that student decisions on such matters may occur at various times during their training. When fully developed, the plan, Dr. Chapman predicted, will produce a graduate who is more broadly trained and can proceed with equal facility to the next stage of preparation for medical practice, a research calling, or into new opportunities in community medicine.

A key component in the Dartmouth Plan is the Mary Hitchcock Memorial Hospital which is currently doubling its capacity to a total of 480 beds. The Hitchcock Clinic, a group of 70 highly qualified physicians, along with fulltime clinical faculty in the Medical School, will provide clinical instruction for students under the new plan.

Although building funds related to the plan are largely in hand through the grants mentioned earlier, Dean Chapman noted that the Medical School still seeks $14 million in additional endowment to implement the program.

BLUE CROSS-PHYSICIANS SERVICE ANNOUNCE NEW PROGRAMS

Blue Cross and Physicians Service are planning to improve the benefits of their Plan 65 program without changing membership fees, under a proposal filed with the State Department of Business Regulation.

The Plan 65 program supplements the benefits of Federal Medicare for subscribers over age 65.

The health plans propose to provide coverage for Medicare's $50 deductible and 20 per cent coinsurance for physicians' home and office medical visits.

If approved by the Department of Business Regulation, the new benefits will go into effect on July 1 for the 52,000 Rhode Islanders enrolled in Plan 65.

Also announced was a new program of Pulmonary Home Care for patients with lung diseases has been established by Rhode Island Hospital, with Blue Cross and Physicians Service participating on a pilot basis for one year.

The program is aimed at providing care in the home at less cost to the pulmonary patient than actual inpatient hospital care. Shorter hospital stays will also result, helping to relieve a shortage of beds at the hospital.

Lloyd H. Hughes, executive director of Rhode Island Hospital, said that a special Pulmonary Home Care Department has been set up to coordinate the services of specialists and community

(Continued on next page)

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Latest scientific equipment and techniques of the most modern dairy, as well as constant care that our name goes on only the very best, is your assurance of uniform quality, consistently. It's been that way with us since 1881.

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Vitamin B_1	7.5 mg
Vitamin B_2	7.5 mg
Vitamin B_6	7.5 mg
Vitamin B_{12}	50 mcgm
Vitamin C	200 mg
Niacinamide	30 mg
Folic Acid	0.05 mg
Pantothenic Acid	15 mg

Bottles of 60

* anticostive, *adj.* (*anti* opposed to + *costive* causing constipation.) Against constipation. (Now isn't that a good idea in an iron-containing hematinic? We'll send you samples if you'll send a request on your Rx blank, addressed to Department 150.)

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health groups participating in the program. Patients from the greater Providence area with pulmonary conditions, such as emphysema, may qualify for treatment under the program.

GIVE UP CIGARETTES — FOLLOW PHYSICIANS' EXAMPLE

A survey currently being carried out by the U.S. Public Health Service indicates that some 100,000 physicians in the United States have quit smoking cigarettes. Of the physicians surveyed so far, 35 per cent never smoked, 36 per cent used to smoke but have now stopped, and only 29 per cent are still smoking. These findings were obtained from responses to a questionnaire received from a sample of 2,142 practicing physicians. By comparison, 52 per cent of the adult male population and 34 per cent of the adult female population currently smoke cigarettes. Commenting on the survey, (conducted for PHS by the National Opinion Research Center of the University of Chicago) Surgeon General William H. Stewart said: "The encouraging record of physicians in giving up smoking leads us to hope and to expect that there will be a significant decline in smoking in the general public and a corresponding decline in lung cancer and other diseases associated with smoking."

("Survey of MDs Indicates 100,000 Are Ex-Smokers," in *Medical Tribune*, February 8, 1968)

ALCOHOLISM AND CANCER OF HEAD AND NECK — A RELATIONSHIP?

A long-suspected relationship between alcoholism and cancer of the head and neck will be the subject of a pilot study conducted by the Research Foundation of the State University of New York. The study will be financed by the Cancer Control Program, National Center for Chronic Disease Control, Public Health Service.

Dr. William L. Ross, Chief, Cancer Control Program, said that under terms of the contract, the Foundation will perform complete examinations of male and female alcoholics admitted to the Downstate Medical Center in Brooklyn, New York. The object will be to determine to what extent protein deficiency, vitamin deficiency, liver disease and other factors associated with alcoholism stimulate the development of cancer and pre-cancerous sores of the oral cavity, oropharynx, and larynx.

Each patient will be interviewed to obtain data concerning his drinking habits, smoking habits, education, income, employment, ethnic background, age, sex, and other factors, Dr. Ross stated.

Mouth and chest x-rays will be taken, all abnormalities of the head and neck area will be charted, and cytologic smears taken from each abnormality. A biopsy will be performed on each lesion which is clinically suspected to be cancer or which yields a positive or suspicious cytologic specimen.

Patients with positive biopsies will receive treatment which is medically indicated.

Numerous blood chemistry determinations will be made. In addition, salivary specimens will be collected and examined for pH and sodium and potassium content, since these tend to be abnormal in alcoholics.

The contract calls for dividing the total alcoholic study group into various categories, and then matching them with non-alcoholic control groups on the basis of sex, age, and smoking history.

FIRST MEDICAL CLASS ENROLLED AT U. OF CONNECTICUT

The opening class of the University of Connecticut Medical School with have 30 medical students. The Dental School will have only 18, the Hartford County Medical Association Bulletin reported recently.

Students will use temporary buildings for the first year and perhaps for the second. When the Health Center is opened, each school will have 48 students.

Dr. William Fleeson, the medical school's associate dean, said that he had to cut off applications January 1, after processing 1,005 requests for the 30 places for the first class. Since then 200 to 300 more requests have come in.

Inasmuch as the medical school is part of a state university, Connecticut residents have been given a preference. In fact 24 out of the 30 applicants are state residents.

Dr. Fleeson reported that 250 state residents applied for the medical school, out of which the 24 were selected, the medical school drew up a waiting list of 60 more.

There are three females in the class.

During the first two years both medical and dental students will take the same courses.

SCHOOLS AS NEIGHBORHOOD RECREATION CENTERS

Vice President Humphrey recently cited facts and figures which should send every American running to the nearest sports club, or at least jolt him out of the easy chair in front of his television set.

- 1 out of every 2 American adults is overweight, according to estimates by the American Medical Association;
- 50 per cent of America's college students — young men and women in their late teens or early twenties — fail to meet accepted physical fitness standards; and
- The average American youngster spends 10 hours watching TV for every hour he spends in supervised sports or physical activity.

As a way of getting Americans of all ages to be more active and fit, the Vice President has suggested that we convert our schools into neighborhood recreation centers. Specifically, he is asking all communities to keep open their school sports facilities — the gymnasiums, swimming pools, tennis courts, tracks, and playing fields—this summer. America has nearly $100 billion invested in its schools, yet most communities operate them at capacity only 8 hours a day, 180 days a year.

Communities which already employ the approach recommended by the Vice President report that it costs only a few dollars per capita to cover the cost of staff, equipment, maintenance and other operating expenses. That's cheap compared to the cost of duplicating the trained leadership and extensive facilities which our schools employ only part-time.

HAVE YOU READ YOUR HEALTH INSURANCE POLICIES?

Don't wait until you get sick to familiarize yourself with your health insurance policy.

Read it, review it, keep it in a safe place — and discuss it with your family, advises the Health Insurance Institute.

For instance:

- Reading your policy's basic provisions and benefits will give you a better understanding of its values and how it can best serve you and your family if it should ever be needed. Reading your policy will also help you avoid misconceptions.

(Continued on next page)

To fight TB- find it first!

Make tuberculin testing routine with every physical examination.



TUBERCULIN, TINE TEST (Rosenthal)

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.

Lederle

330—8/6135

• Reviewing your policy on a regular basis will remind you to make necessary changes to keep your benefits in line with the rising costs of medical care.

• Keeping your policy in a safe place will prevent its getting lost or destroyed — an all-too-common occurrence. You can obtain a duplicate of course, but not without the possibility of some inconvenience or delay. And loss of a policy is often discovered when a family needs it most. (It is a good idea to keep the name of your insurance company and policy number in your wallet.)

• Discussing your policy with the family is advisable because it allows them to know the insurance benefits available in case you are sick or injured.

It is also important, says the Institute, to keep your insurance company informed of your address. Even if you are planning to be away for only a few months, be sure to notify your insurer of your change of address.

Because no two persons are in the same situation physically, economically and financially, their health insurance requirements differ widely. However, it is wise to review your policy annually, and if any questions arise, consult you family insurance agent.

MASSACHUSETTS RULES MARIJUANA DANGEROUS NARCOTIC

During 12 days of pre-trial in one of the country's most strenuous constitutional tests on the drug marijuana, the legal "eyes" of the nation — and the literal interests of hundreds of thousands of students in colleges everywhere — were focused on the Massachusetts Superior Court.

Chief Justice G. Joseph Tauro, in a lengthy and carefully reasoned 31-page decision, on a motion to to dismiss indictments for illegal possession of marijuana, upheld on December 20, the Massachusetts statute prohibiting possession and use of the drug. (*Commonwealth v. Leis.*)

Declaring that "to my knowledge," this has been the most extensive judicial inquiry into the legal and factual aspects concerning the use of marijuana," Judge Tauro added:

It is my opinion, based on the evidence presented at this pre-trial hearing, that marijuana is a harmful and dangerous drug . . . I do not find that the inclusion of marijuana in the statutory definition of a narcotic drug is constitutionally offensive.

Of grave and immediate apparent importance is the growing appeal marijuana has for the young people of high school and college age.

Evidence of marijuana's harm — as seen in the wards of New York's Bellevue Hospital — carried more weight with Judge Tauro than testimony on its safety from college campuses.

. . . From TRIAL Magazine



Wherever you go, forget your telephone calls. We'll take them for you, day or night.

MEDICAL BUREAU
of the
Providence Medical Association

7th POST-GRADUATE CONFERENCE ON MEDICAL ASPECTS OF SPORTS

AT THE UNIVERSITY OF RHODE ISLAND, KINGSTON, R. I.

August 15 and 16, 1968

Sponsored by the Committee on the Medical Aspects of Sports of the Rhode Island Medical Society, and the University of Rhode Island.

THURSDAY, AUGUST 15, 1968 (Morning)

8:45	Registration
9:15	Welcome President, University of Rhode Island John J. Cunningham, M.D., President, Rhode Island Medical Society
9:30-9:50	Pediatric Aspects of Sports Gilbert Houston, M.D., Pediatric Dept., Kent County Hospital
9:50-10:10	Developing Patterns in the Care of the High School Athlete John Duff, M.D., Orthopedic Surgeon, Danvers (Mass.) Hospital
10:10-10:30	Athletic Training of the Secondary High School Athlete Robert Gunn, Head Trainer, Lamarr State College, Beaumont, Texas; U.S. Team Head Trainer, Pan-American Games 1967, Winnipeg, Canada
10:30-10:45	Questions and Answers
10:45-11:00	Coffee Break
11:00-11:30	The Team Physician and the Law A. A. Savastano, M.D., Orthopedic Surgeon-in-Chief, Rhode Island Hospital, Providence, Rhode Island; U.S. Team Physician, Pan-American Games 1967, Winnepeg Canada
11:30-12:00	Recurrent Anterior Subluxation of Shoulder Martin Blazina M.D., Professor of Orthopedic Surgery, U.C.L.A.; Team Orthopedic Surgeon, U.C.L.A.
12:00-12:15	Questions and Answers
12:15- 1:45	Lunch

THURSDAY, AUGUST 15, 1968 (Afternoon)

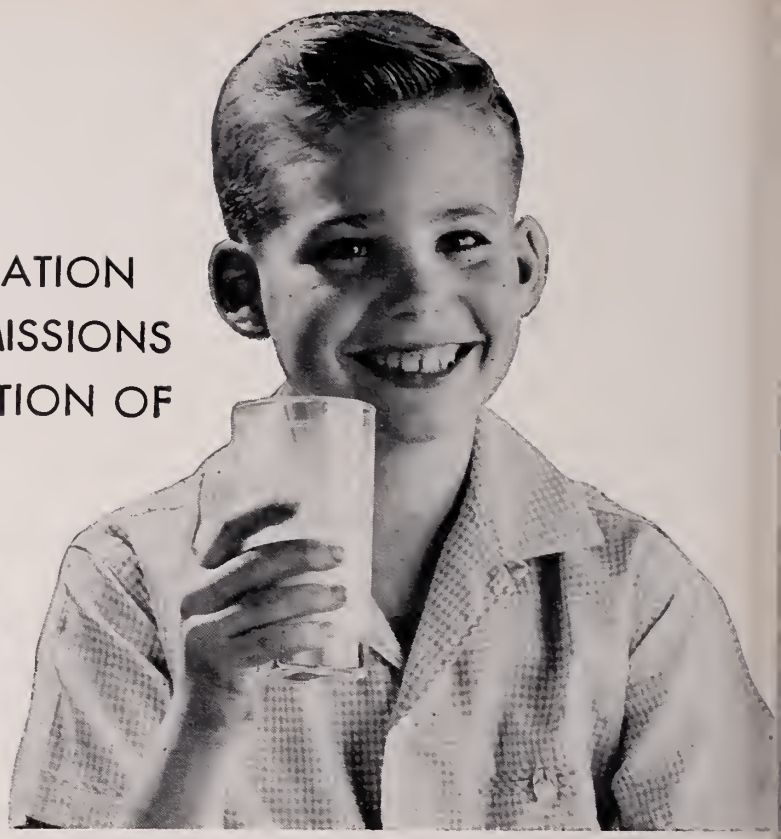
1:45- 2:45	Panel Presentation on Conditioning (20 minutes each) 1. Soccer and Lacrosse Clifford Stevenson, Head Coach, Brown University 2. Hockey John Chapman, Head Coach, University of Connecticut 3. Track and Field Tom Russell, Head Coach, University of Rhode Island
2:45- 3:15	Heat Problems During Early Season Training Robert Gunn, Head Trainer, Lamarr Tech., Beaumont, Texas
3:15- 3:30	Coffee Break
3:30- 4:00	Baseball—Conditioning and Common Injuries Frank Sheridan, Head Trainer, Lafayette College, Easton, Penn.; U.S. Team Trainer, Pan-American Games 1967, Winnipeg, Canada

(Concluded on Page 471)

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THE AMERICAN ASSOCIATION OF MEDICAL MILK COMMISSIONS SUPERVISES THE PRODUCTION OF



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7. **THE DOCTOR'S MILK.** Produced, processed, bottled on farms supervised by Medical Milk Commissions. Each bottle bears the seal of the A.A.M.M.C. and names of the supervising Commission and producing farm.

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Produced at Hillside Farm, Cranston, R. I.

Rhode Island's only Producer of Certified Milk

7TH POSTGRADUATE CONFERENCE ON MEDICAL ASPECTS OF SPORTS

(Concluded from Page 469)

4:00- 4:30	Osteochondritis of the Capitellum—A Type of Young Pitcher's Elbow Martin Blazina, M.D., U.C.L.A. Team Orthopedic Surgeon
4:30- 5:00	Responsibility of the Team Physician John Duff, M.D.
5:00- 5:15	Questions and Answers
6:30	CLAM BAKE—Under the Big Top on the Campus

FRIDAY, AUGUST 16, 1968 (Morning)

9:00- 9:20	Ankle Injuries John Duff, M.D.
9:20- 9:40	Preparticipation and On Site Controls of Knee Injuries Royer Collins, M.D., Orthopedic Surgeon, Scott-White Clinic, Temple, Texas
9:40-10:20	Weight Training Thomas DeLorme, M.D., Orthopedic Surgeon, Instructor in Orthopedic Surgery, Harvard Medical School
10:20-10:35	Questions and Answers
10:35-10:50	Coffee Break
10:50-11:20	The Significance of Arrhythmias in the Athlete Frank Merlino, M.D., Department of Cardiology, Rhode Island Hospital
11:20-12:15	Panel Presentation on Special Injuries Rhode Island Hospital Specialty Staff 1. Eye Injuries—Linus Sheehan, M.D. 2. Genito-Urinary Injuries—Anthony Rotelli, M.D. 3. Abdominal Injuries—Warren Francis, M.D.
12:15-12:30	Questions and Answers
12:30- 2:00	Lunch

FRIDAY, AUGUST 16, 1968 (Afternoon)

2:00- 2:30	Classification of Injuries to the Articular Cartilages of the Knee in Athletes Martin Blazina, M.D.
2:30- 3:00	Rehabilitation of the Injured Adolescent Athlete Robert Gunn, Head Trainer, Lamarr Tech., Beaumont Texas
3:00- 3:30	Gastro-Enteritis Clayton Thomas, M.D., Medical Director, Tampax Laboratories
3:30- 3:45	Questions and Answers
3:45- 4:00	Coffee Break
4:00- 4:30	Medical Supervision of the Female Athlete Daniel Hanley, M.D., Head Physician, U.S. Olympic Team; Director, Student Health, Bowdoin College, Brunswick Maine
4:30- 5:00	Proper Fitting of Athletic Equipment Robert Gunn, Head Trainer, Lamarr Tech., Beaumont, Texas
5:00- 5:30	Sound Movie "Taping and Wrapping"
5:30	ADJOURNMENT

Book Reviews

MEDICARE AND THE HOSPITALS. Issues and Prospects, by Herman Miles Somers and Anne Ramsay Somers. Studies in Social Economics. The Brookings Institution, Washington, D.C., 1967. $6.75

The Brookings Institution of Washington has for forty years sponsored independent studies in economics, government, and related fields. This report sustains the Institution's long tradition of excellence and objectivity. Professor and Mrs. Somers are a husband and wife team who have published a previous study on the financing of health care for the Brookings. He is professor of public affairs and politics at Princeton and she a member of Princeton's Industrial Relations Section.

The text is comprised of eleven chapters divided into three parts titled "The Protagonists," "The Major Issues," and "Prospects." The account of the historical background is impeccable and objective. While the main focus of the book is on the influences which Medicare will have on the structure and operations of hospitals, the overall effects on the practice of medicine are also considered extensively. The analyses of the major issues may raise some hackles, but on the whole they are fair. The predictions for the future are more controversial and, if accurate, will be discouraging to those who have hopes of preserving the private practice of medicine as we have known it, and the traditional doctor-patient relationship.

A few quotations from the text will give some idea of the tenor of the authors' point of view:

Item. "The inescapable question is being raised as to whether it is feasible for the government to guarantee to any group or profession payment at any level the group may unilaterally elect. The answer appears increasingly self-evident. The entire fee-for-service system is being called into doubt."

Item. "The benefits available to Medicare beneficiaries are far more extensive than those currently available to most people with private insurance contracts whose inadequacy will be conspicuously dramatized. A sense of injustice will be generated and demands for at least parallel benefits will rise — demands that the private sector can evade only at its peril."

Item. "Two major patterns for the future hospital are evolving: (1) it will develop into a community health center capable of providing the full spectrum of care for early prevention to rehabilitation and long-term care; (2) it will become part of an integrated regional complex of medical care institutions with a medical school and one or more teaching hospitals at the core. Smaller institutions will become satellites programmatically, although not necessarily financially or administratively, of larger institutions."

Item. "The traditional view of the hospital as more than a back-up resource to the private practitioner is fading fast. The public and its pacesetting programs, such as Medicare, will increasingly look to the hospital in partnership with its medical staff as the central resource for meeting demands for the full spectrum of care."

Item. "Their (the hospitals') capital and revenues will be derived increasingly from large public and private institutional sources that are demanding, and are in a position to get, greater accountability. Among these, governments at all levels will be predominant."

Item. "Medicare's influence extends far beyond its formal boundaries. It can serve as fulcrum and lever for guiding and moving the organization and financing of American medical care along avenues that represent a better future for all."

These are but samplings of many concepts explored in this extensive study. While the reader may find some of the opinions hard to take, he will have no doubt where the writers stand. The accuracy of their views will be tested by time and experience.

This book is not easy reading. You cannot watch television and read it at the same time. It is highly recommended, however, for those who want an intelligent account of where we have been and some incisive predictions of where we may be going.

SEEBERT T. GOLDOWSKY, M.D.

* * *

DRUGS OF CHOICE 1968-1969 by Walter Modell, M.D., Editor, The C. V. Mosby Company, Saint Louis, 1967. $17.75

Judging from the chapter on the management of skin disorders by Victor H. Witten and Richard J. Helfman, where my knowledge is greatest, I should like to say that the distribution of subjects is good and the instructions and prescriptions given are clear and useful.

In general practice there is a prevalent tendency to start treatment with corticosteroids orally and even parenterally for any minor or transient dermatosis. The authors give, among their general rules, this maxim: use all corticosteroids sparingly.

The authors stress the use of appropriate laboratory studies before treating a dermatitis, such as a fungal disorder, caution about the use of anti-

metabolites in psoriasis and discuss the effects of soaps on senile skin.

This is a most useful book.

F. RONCHESE, M.D.

* * *

HEALTH OF MANKIND. Ciba Foundation 100th Symposium. Edited by Gordon Wolstenholme and Maeve O'Connor. Little, Brown and Company, Boston, 1967. $12.00

This is a most interesting and instructive collection of investigations by international authorities on the habits and health of the undeveloped countries, called the developing countries, and their difficulties in fighting overpopulation, famine, and lack of hygienic facilities.

As an example of the difficulty of evaluating statistics, the system of computing industrial accidents is quoted. Included in industrial accidents in France are traffic accidents to and from work.

The authorities are from England, Switzerland, Turkey, Greece, Norway, Chile, Holland, Denmark, Japan, Canada, France, and the United States. After each presentation a lively discussion follows among the panelists. One of them was the recently deceased Dr. Gregory Pincus.

Another valuable contribution of the Ciba Foundation is added to the impressive list.

F. RONCHESE M.D.

* * *

INFECTIOUS DISEASES OF CHILDREN by Saul Krugman and Robert Ward. Fourth Edition. The C. V. Mosby Company, Saint Louis, 1968. $16.50

This is the fourth edition of this classic and includes the advances of the last four years. It is a very good reference book because it gives all the unusual complications. There are brief case reports. To illustrate, a child of three and one-half months, whose mother had had chicken pox in her seventh month of pregnancy, had herpes zoster. And an adult died from chickenpox pneumonia.

You will find excellent descriptions of many diseases which used to be fairly common and are now rare, but which may still appear. This list includes diphtheria, rabies, small pox, typhus, and typhoid. The chapter on sepsis in the newborn is especially good.

The viruses seem to be in the limelight now. New ones are constantly appearing and the total is in the hundreds. This is a rapidly changing field, and a summary like this is necessary if the average physician is to keep up to date.

I found this to be a very readable book. It should be in the library of most doctors who treat infectious diseases and children.

HAROLD G. CALDER, M.D.

Peripatetics

MELVIN HOFFMAN of Providence was elected and installed as the new President of the R.I. Society of Internal Medicine at the annual meeting held recently at the Wannamoisett Country Club. FRANK P. FOSTER, M.D., President of the Massachusetts Society of Internal Medicine and a staff member of the Lahey Clinic, addressed the meeting on the subject of "The Internist, Marriage, and the Adolescent." RAYMOND MOFFITT is the new President-Elect, ROBERT V. LEWIS, Vice President, and RICHARD FRARY, Secretary-Treasurer. FRANCIS VOSE of Woonsocket was elected Councillor.

* * *

CHARLES J. ASHWORTH of Providence was installed as President of the Conference of Presidents and Other Officers of State Medical Associations at the organization's meeting in San Francisco on June 16 . . . EDMUND T. HACKMAN of Warwick, the Society's delegate to the American Medical Association, was named as a member of one of the major Reference Committees for the determination of actions of the AMA House of Delegates at the recent meeting in California . . . JOHN E. FARRELL, executive secretary of the Society, and a past President of the American Association of Medical Society Executives, addressed the annual meeting of that group on June 15 at San Francisco on the "Group Health Association Movement in the United States."

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ONE SENTENCE ESSAY

Don't speak unless you can improve on the silence.

. . . Quaker saying, quoted by John H. Talbott, M.D. in Annual Discourse before Mass. Med. Soc., 1967

Edalogy . . .

(Ethnic Medicine)

PHOTODERMATITIS IN INDIANS OF MANITOBA

A typical photodermatitis was observed in 64 North American Indians belonging to four tribes resident in Manitoba. Clinically it was similar to polymorphic light eruption, but differed in the following respects: onset before 10 years in 60 per cent and before 20 years in 75 per cent; a positive family history in 45 per cent, suggesting the possibility of transmission as an autosomal dominant trait, and presenting solely as a chronic recurrent summer actinic cheilosis, affecting both males and females, and starting in childhood in seven of nine Indians involved. Examination for porphyrins and erythropoietic photoporphyrins was negative.

. . . Birt, A. R.: Canad. Med. Assn. J. 98:392, (Feb. 24) 1968

* * *

SARCOMAS IN AFGHANISTAN

In Afghanistan, sarcomas are not greatly outnumbered by carcinomas There may be an etiological relationship between some sarcomas and an environmental factor, the arthropod vectors. Experimental subcutaneous administration of tumor-inducing agents, both viral and chemical, often leads to the development of sarcomas at the site of inoculation. The distribution of bites from crawling arthropods, e.g., fleas, ticks, and bedbugs, is similar to the distribution, in Afghanistan, of soft tissue sarcomas, which are most abundant on the lower extremities and rarely found on the palms or soles. There is good reason for further examination of the hypothesis that soft-tissue sarcomas may be caused by carcinogenic agents introduced through the skin by anthropod vectors.

. . . Sobin, L. H.: Nature 217:1072, (March 16) 1968

* * *

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HIGH INCIDENCE OF TWINNING IN WEST AFRICANS

A West African woman is more likely to give birth to twins than anybody else in the world. The high twinning rate in some of the countries may possibly be due to:

(1) *Hospital bias.* The twinning rate may be inflated because a woman delivering twins is more likely to be uncomfortable or have complications and thereby seeks hospital care.

(2) *Parity and age.* Women in West Africa have many children, which increases the chance of twinning.

(3) *Nutrition.* The nutritional status may affect the incidence of twinning.

(4) *Heredity.* The propensity to twinning may be genetically transmitted, since the incidence of twinning is consistently high in those West African countries where the Negro predominates. Lower rates in other areas mainly populated by Negroes may be due to ancestral miscegenation, with subsequent modification of the original genetic pattern of the Negro.

. . . Nylander, P. P. S.: Wld. Med. J. 14:178, 1967

* * *

INACTIVATION OF ISONIAZID IN BURMESE SUBJECTS

Isoniazid was administered to 121 Burmese subjects, 79 men and 42 women, aged between 18 and 38. Of these, 76 were rapid and 45 were slow inactivators. The gene frequency found indicates that approximately 37 per cent of Burmese subjects would carry the risk of neuropathy if clinically treated with isoniazid. The results are consistent with current opinion of the Mongoloid origin of the gene responsible for the hepatic acetyltransferase involved.

. . . Smith, E. E., and Kyi, T.: Nature 217: 1273, (March 30) 1968

THREE SENTENCE ESSAY

Those who can, write. Those who cannot, edit. Those who cannot edit, set editorial policy.

. . . Anon., quoted by John H. Talbott, M.D. in Annual Discourse before Mass. Med. Soc., 1967

DERMAQUIZ ANSWERS

(See Page 440)

Top left, Adenoma sebaceum, type Pringle. Bottom left, Adenoma sebaceum, type Balzer-Menetrier. Both manifestations of epiloia. Treatment, electrocoagulation.

At right, cystic acne, a variety of acne vulgaris, improving slowly with treatment and age.

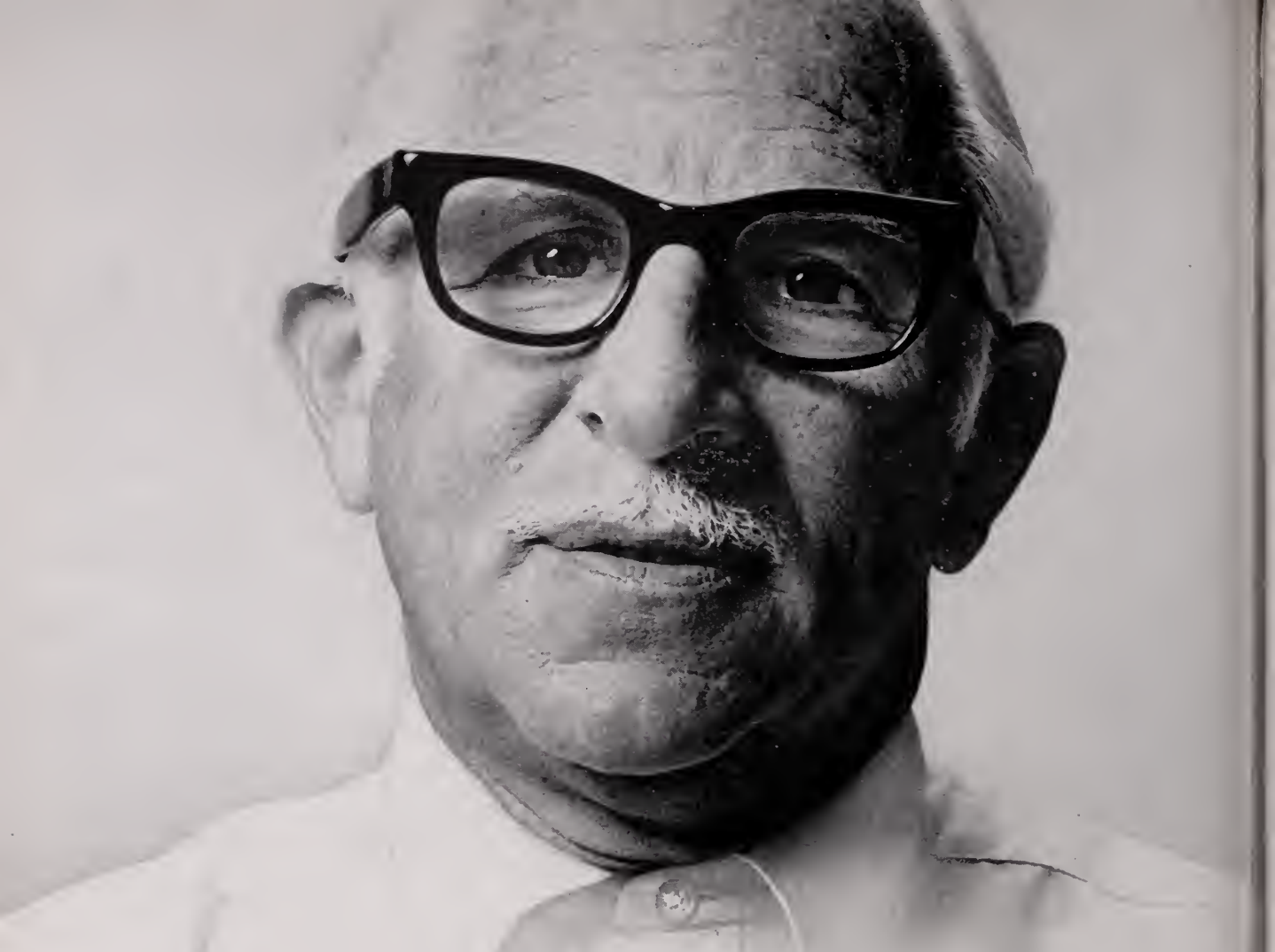
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RHODE ISLAND MEDICAL JOURNAL



SYMPOSIUM ON DIABETES . . . SEE PAGES 493 - - 507



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Contraindication: History of hypersensitivity to demethylchlortetracycline or nystatin.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth—dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in the bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, fruits and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

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The RHODE ISLAND MEDICAL JOURNAL

Vol. LI, No. 8 August, 1968

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Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.
Warning: Tandearil is an analog of phenylbutazone; sensitive patients may be cross-reactive. If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy and in patients with thyroid disease.
Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia), sudden weight gain (water retention), skin reactions, black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.
Adverse Reactions: The more common are nausea and edema. Swelling of the ankles face may be minimized by withholding diet salt, reduction in dosage or use of diuretics In elderly patients and in those with hypertension, the drug should be discontinued w the appearance of edema. The drug has be associated with peptic ulcer and may react

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e a latent peptic ulcer. The patient should instructed to take doses immediately after als or with milk to minimize gastric upset. g rash occasionally occurs. If it does, mptly discontinue the drug. Agranulocy- is, exfoliative dermatitis, Stevens-Johnson drome, Lyell's syndrome (toxic necrotiz- epidermolysis) or a generalized allergic ction similar to a serum sickness syn- me may occur and require permanent ndrawal of medication. Agranulocytosis occur suddenly in spite of regular, re- ated normal white counts. Stomatitis, sali- y gland enlargement, vomiting, vertigo and guor may occur. Leukemia and leukemoid ctions have been reported. While not defi- ely attributable to the drug, a causal rela- nship cannot be excluded. Thrombocyto- penic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity, angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

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DERMAQUIZ

Conducted by FRANCESCO RONCHESE, M.D.



At left, one swollen leathery leg, studded with purple red solid nodules, the disorder going on for 20 years with moderate discomfort. The 70-year-old patient stands and walks at work every day. The opposite leg, of normal size, shows brown-black spots, representing the early manifestation of the disease. Would the patient live 20 more years, most likely the left leg will look like the right one looks now.

At right, a palm showing a brown-black spot, with no pain, itching or discomfort. Cases of this clinical appearance have been reported as Tinea Nigra.

(Answer on Page 510)

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ONE SENTENCE ESSAY

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. . . Glenn Sawyer, M.D., general secretary of the Ontario Medical Association

ONE SENTENCE ESSAY

If the experience of other industries with computers is repeated in hospitals, we can expect that the introduction of computers will not decrease the total cost of medical care. . . .

. . . G. Octo Barnett, M.D., director of the Laboratory of Computer Science at the Massachusetts General Hospital.

Report of Actions of the House of Delegates of the American Medical Association at the 117th Annual Meeting, at San Francisco, California, June 16-20, 1968

EDMUND T. HACKMAN, M.D.
Rhode Island Delegate

The House of Delegates' meetings at the 117th annual convention of the American Medical Association held in San Francisco in June proved to be very busy sessions. The House faced 143 items of business, including 84 resolutions, 39 reports from board of trustees, 18 from the Councils of the AMA, and two special reports.

I am pleased to report that your delegate was selected to serve on one of the busiest reference committees, and the experience was most gratifying.

The AMA News and the Journal of the AMA will report in detail the transactions of the convention and of the House, and therefore this report will list the highlights of actions as reported to us by the office of the executive president.

ELIMINATING DISCRIMINATION

The House approved of a resolution very similar to the one first proposed five years ago by the Rhode Island Medical Society relative to discrimination against physicians by medical organizations in some parts of the nation. Our resolution when presented several years ago was subject to much discussion, and it was tabled by the House. The current House, however, approved of a resolution from Massachusetts that "The bylaws of the AMA be amended to provide that in addition to receiving 'appeals filed by applicants who allege that they, because of color, creed, race, religion or ethnic origin, have been unfairly denied membership in a component and/or constituent association,' determining facts and reporting its findings to the House of Delegates, the Judicial Council shall, if it determines the allegations are indeed true, admonish, censure or, in the event of repeated violations, recommend to the House of Delegates that the state association involved be declared to be no longer a constituent association of the American Medical Association."

The Council on Constitution and Bylaws will draw up the necessary new wording for the bylaws for action at the next meeting of the House.

In addition, a joint statement of the AMA and the National Medical Association was contained in a Board report accepted by the House for information. The statement pointed out that the number of Negro physicians, although not specifically known, is not in proportion to the Negro population and that the difficulty in finding more than a few promising candidates for medical school "reflects cultural and educational problems stretching back to the quality of instruction in the secondary and primary grades and that of pre-school training in the home."

The AMA and the NMA concluded that "genuine solutions to the problems of increasing the supply of Negro physicians must emanate through improved curriculums, better teaching and specialized courses of training at all school levels for promising Negro students."

Also urged by the two associations were that: "Special college courses be developed for such students. Additional scholarship aid be established at both the college and medical school level for Negro students. . . . Summer programs of special study be arranged for all disadvantaged students about to enter medical school. . . . All medical schools encourage members of their faculties to sponsor special projects involving Negro high school students in laboratory work or other enlightening pursuits to enrich their experiences. All medical societies, medical schools and related groups expand their careers programming with students, parents and guidance counselors at schools of all levels. . . ."

HEALTH CARE COSTS AND FINANCING

A report of the Committee on Health Care Financing, transmitted by the Board, was accepted for information. It included background on the committee's findings and set these directions for the future:

"Adequate health care should be available to all who need it. Recent scientific advances have served to vastly increase the demand for medical services and to increase health care expenditures. Methods of financing health care must aid all individuals to achieve the health services they need. Voluntary programs to finance the costs of health services must accommodate to continuing changes and growth."

Proposals under study by the committee include a community fiscal agency for health services, "not as a competitor for existing health insurance plans,

(Continued on next page)

but to complement those efforts and stimulate greater achievement;" and "income tax credits for the premiums paid for adequate health insurance . . . an effective and feasible method of encouraging maximal participation in voluntary comprehensive health insurance programs."

A resolution was adopted that "the principle of graduated income tax credits for premiums paid for adequate health insurance be adopted as approved policy of the AMA."

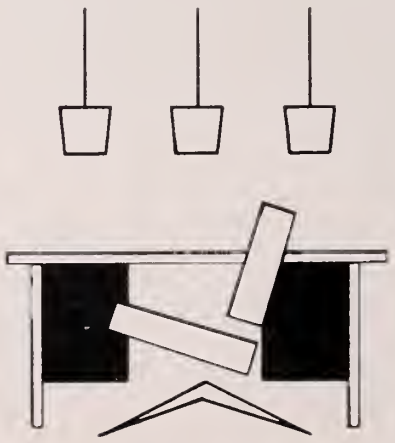
Another adopted resolution urged all state and local societies "to act swiftly and firmly in all instances of known exploitation and excessive charges for health care that may occur in their jurisdictions."

A resolution referred to the Board called for a program by the AMA of "defining, explaining and reporting the many categories of health care expenditures; analyzing health care cost and expenditure data developed and reported by other sources; and providing . . . information on health care costs which can be used to place the true costs of medical care in proper perspective with the public."

A Board report on the economics of health care, adopted by the House, pointed out that the Board "has approved a committee recommendation that a technical evaluation of the full potentialities of the AMA in the field of economics of health care be carried out by a small advisory group of competent, nationally recognized economists. It is expected that this will be done promptly."

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In the area of reducing costs to patients, the House adopted a resolution that "the AMA endorse the principle of voluntary health insurance coverage for outpatient x-ray and laboratory services acceptable to the hospital and its medical staff wherever performed prior to a scheduled hospital admission;" and adopted another resolution that "all insurance companies and fiscal intermediaries" adopt and authorize the use of standard forms in conjunction with a single hospital admission to save physicians' time and expense.

With respect to physician time, the House recognized "the excellent contribution made to the continuing education and improvement of physicians' knowledge by many methods of medical meetings, scientific conferences and critical review of clinical experience," but pointed out that these must "be contained within the physician's available time" and urged "continued experimentation in methods that would . . . conserve the phyician's time an thus improve the quality of patient care."

LEGISLATION AND RELATIONSHIP WITH GOVERNMENT

Regarding comprehensive health planning, the House adopted a Board report recommending that "the House of Delegates urge those states which have not held informational conferences on the subject to conduct orientation conferences in order to reach a greater number of leaders at the local level. The report pointed out that, "The Department of Hospitals and Medical Facilities has mailed periodically to each state medical association packets of pertinent references on PL 89-749 and PL 89-239 . . . and . . . the Board has authorized development of a 'Handbook on Prototypes of Community Planning for Health Services' based in part on field surveys."

Also adopted was a Council on Medical Service report on comprehensive health planning which recommends that "The AMA and the constituent and component societies give unstinted, diligent attention to the process of comprehensive health planning which, at present, places priority on local initiative and decision-making, and that the AMA at all levels endeavor to assure through all appropriate means, a system of checks and balances so that state and area planning agencies are not given authority to subordinate local planning efforts and dictate local decisions on health planning."

Two resolutions concerning comprehensive planning were combined to state the House's will that "medical societies encourage the organization of local health planning councils without the assistance of HEW grants."

The House also expressed its will that "The society should use some mechanism such as a nonprofit corporation or other entity, separate from the society itself and served by an independent ad-

(Continued on Page 484)

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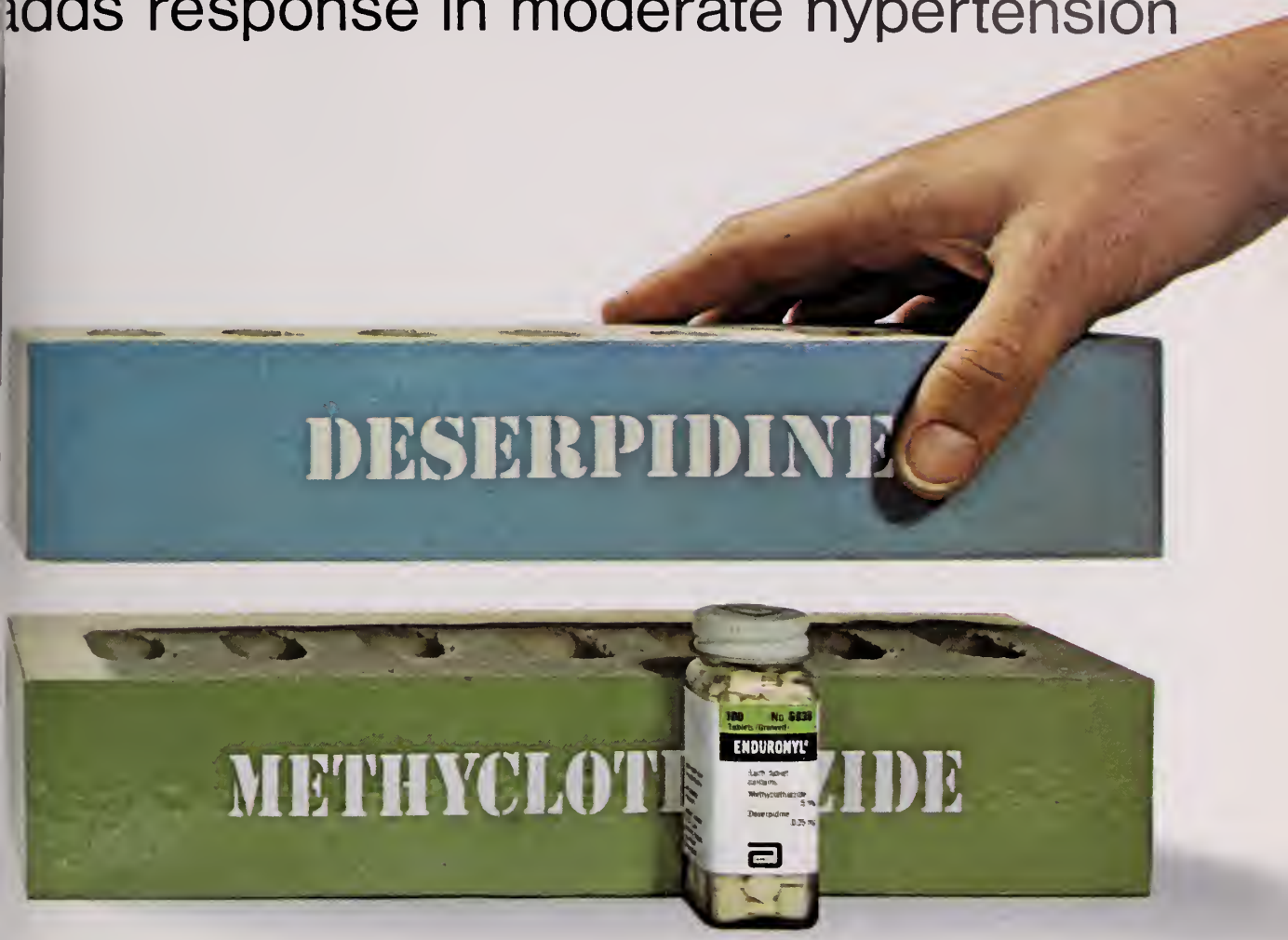
METHYCLOTHIAZIDE

MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

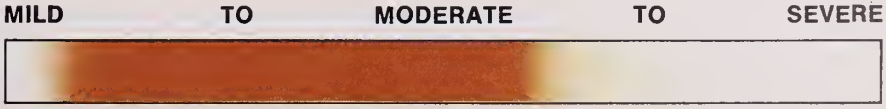
Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 mg. with DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.

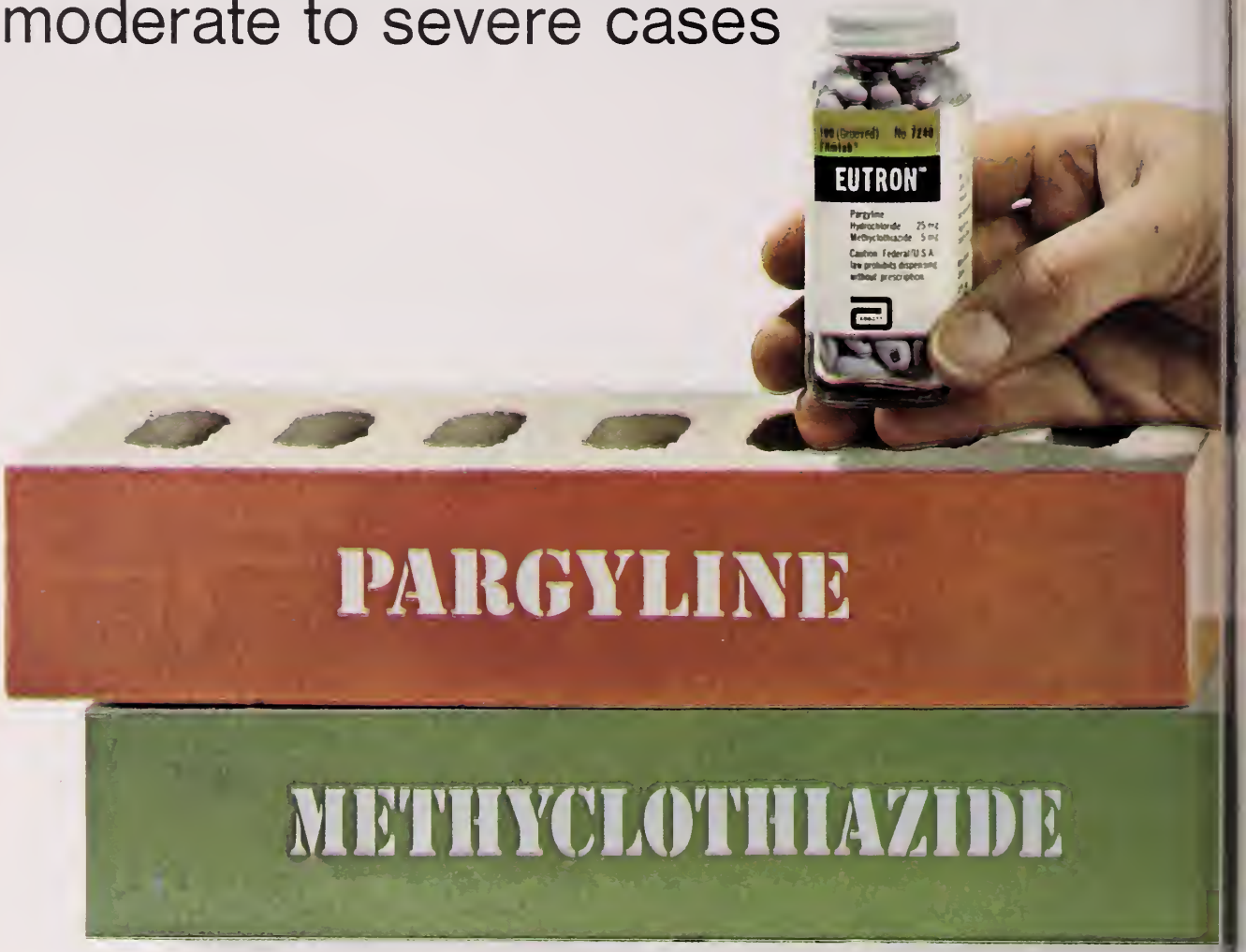
MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

801094

Eutron: A unique combination for handling moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether you patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings wer reduced from 112 pre-treatment to 90 post-treatment; *sitting* fror 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearl alike in all three body positions.

Use Eutron for managing your moderate to severe cases. It building blocks enhance each other; hence lesser doses often suffice

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCLOTHIAZIDE 5 mg.

MILD TO MODERATE TO SEVER



See Brief Summary on final page of advertisement

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symtomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON™

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhibitors; methyldopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage: caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methyclothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions — Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficult in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methyclothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug. 804438R

ABBOTT

TM-TRAOEMARK

A M A DELEGATES

(Continued from Page 482)

ministrative staff, where possible, to avoid direct operational involvement of the medical society as a body."

A Council on Medical Service report adopted by the House pointed out, "There are no easy, black-or-white solutions to this dilemma. With government increasingly involved in research and experiment in the delivery of health services and payment for care, we cannot ignore government programs. On the other hand, the multiplicity of programs and approaches at the national, state and local level precludes blanket endorsement of any given level of involvement. The Council therefore recommends that this House make it clear that medical societies *may,* after mature consideration, legitimately take part in such programs . . . and that it should trust to the good sense of the individual state and county societies to recognize the serious import and the need for careful study before deciding on such step."

To strengthen the AMA's continuing liaison with the federal government on matters of health legislation, the House adopted a statement that because "the private practicing physicians are the best qualified group in matters pertaining to health services," the AMA should "request the Secretary of HEW to continue to solicit the advice and counsel of those practicing physicians designated by their medical associations at the local, state and national level in formulating future plans and programs and in modifying existing programs, in order to provide the best quality health care to the people of the United States."

Three resolutions were introduced objecting to the government's support of group practice, particularly the prepayment type. They were combined into one substitute, "Resolved, that the AMA continue to espouse the private, fee-for-service practice of medicine; and be it further resolved that the AMA strongly disapproves of the provision of funds by the federal government for subsidizing any one form of organization of medical practice."

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In that connection, the House referred to the Board a resolution that the Board set up "a national forum on the solo practice of medicine for the purpose of examining the need for this type of physician care, public preference between solo and group practice and how solo practice should be encouraged."

A resolution was adopted that the Board attempt to change the terminology in the Medicare "Explanation of Benefits" form to eliminate the confusion and criticisms which now exist. Another, referred to the Board, sought to have extended care facilities defined as residences so physicians may bill patients directly for portable x-ray services performed there.

In addition, the House reaffirmed "previous policies requesting that all efforts be made to eliminate recertification requirements under' Medicare and called on the congress "to amend the laws and regulations pertaining to PL 89-97 to specifically permit direct billing to all Title 19 recipients."

The House also resolved that "The Board . . . take appropriate action seeking the establishment of a separate Department of Health headed by a Doctor of Medicine."

A resolution proposed that congress establish within its control a "Committee on Rules and Policies of Federal Administrative Agencies" whose "responsibility it will be to review rules and policies promulgated by federal administrative agencies to determine that (they) are in accord with the legislative intent of the congress." It was adopted in principle and referred to the Board and the Council on Legislative Activities.

The House voted to continue the AMA's own educational program on smoking and health rather than become a formal sponsoring member of the Interagency Council on Smoking and Health.

Finally, in this category, the House resolved to call to the attention of state governors and other state and local officials "that the maintenance of medical treatment facilities and the care of all patients and hospital personnel in the event of a disaster is of prime and basic importance" and that "preliminary planning to provide such protection be a part of every disaster program."

MANPOWER

In response to a report from the Board, a Council on Health Manpower was created by the House, to assume the functions and responsibilities of the former Committee on Health Manpower and the former Commission on Relationships Between Medicine and Allied Health Professions and Services.

With respect to relationships and negotiations between the AMA and the osteopaths, the House accepted for information a Board report which stated, "In the absence of cooperative leadership on the part of the practicing osteopaths and osteo-

pathic educators, accomplishments by the AMA are rendered difficult. Such leadership was forthcoming in California, and is now needed elsewhere. When this osteopathic leadership is developed, the AMA stands ready to cooperate to its utmost."

The House approved a Board report reviewing studies of the status of foreign medical graduates in the United States and directing the new Council on Health Manpower to take the steps necessary to complete plans for the organization and financial support of a commission, to be established outside of government, to coordinate fully all of the issues and activities involving FMG's.

EDUCATION, MEDICAL AND ALLIED

The House approved a Board report urging "that the constituent and component societies of the Association make every effort to insure that additional financial support for medical schools be obtained from all available sources. The Board and the Council (on Medical Education) further urge that all physicians individually recognize their debt as graduates of medical schools . . . by contributing regularly and generously to the financial support of medical schools through the 'Fund for Medical Schools' project" of the AMA-ERF and other appropriate channels.

"Essentials of Approved Residencies" pertaining to residencies in general practice, physical medicine and rehabilitation, psychiatry and anesthesiology were revised.

The House referred to the Council on Medical Education a resolution protesting proposed changes in the Essentials for Accredited Schools of Medical Technology by the American Association of Clinical Pathologists which would eliminate approved schools of medical technology on the basis of size; and referred to the Board a resolution that osteopathic physicians be admitted to AMA approved hospital intership and residency programs under certain circumstances.

Also referred to the Board was a resolution to establish a joint commission on accreditation of nursing schools, with participation by the AMA, AHA, ANA and National League for Nursing.

The House resolved to urged the Board "in its selection of nominees for the Council on Medical Education to give full recognition to the importance of non-university affiliated hospitals in providing effective educational experience;" and referred to the Board and its Council on Health Manpower a resolution that the AMA "establish guidelines for the benefit of constituent and component organizations in dealing with new, as well as emerging paramedical disciplines as they come into being.'

Another resolution referred to the Board related to the JCAH ruling with respect to the use of externs, under proper supervision, for recording

(Continued on next page)



What can be done for Susan Jane To stop the runs and crampy pain?

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects intestinal mucosa.

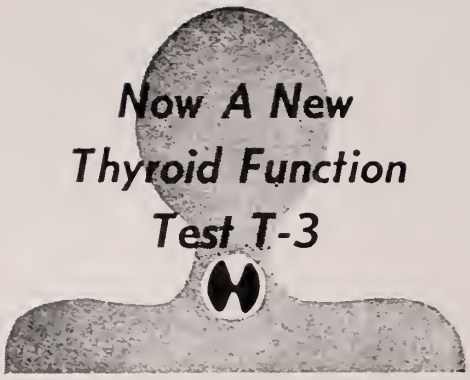
In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent) ..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin ..... (2½ grains) 162 mg.
Kaolin (specially purified) .... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Children's Dose: One or two teaspoonfuls three times daily.

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WILLIAM H. RORER, INC.
Fort Washington, Pa.



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THYROID PROFILE

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IN 3 HOURS!

a proved, accurate thyroid function test[1-4]

T3 (1-triiodothyronine test for determining the thyrobinding index of serum or plasma)

Unaffected by high iodine diets or any iodine the patient may be taking therapeutically or diagnostically (opaque dyes).

Only 2 ml of patient's serum or plasma is required. The patient does not have to take or use anything. The I^{131} is used in vitro.

Stat orders impeccably executed.

Economical because of time-and-labor-saving equipment used.

1. Scholer, J. F.: J. Nuclear Med. 3:41, 1962. 2. Foeckler, F., et al., Paper, Meet. Soc. Nuclear Med., June 1962. 3. Sodee, B.: Paper, Meet. Soc. Nuclear Med., June 1962. 4. Nordyke, A. M., et al.: Paper, Meet. Soc. Nuclear Med., June 1962.

HOPKINS MEDICAL LABORATORY

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history and physical examinations on patients' charts in non-university affiliated hospitals.

INFANT MORTALITY

The House approved a statement on infant mortality prepared by the Committee on Maternal and Child Welfare of the Council on Medical Service and submitted by the Board. The report included a number of recommendations, among which were these:

"Recognizing the fact that unfavorable environmental and socioeconomic factors as well as medical factors are involved in infant mortality, the medical profession should support all constructive community efforts for the improvement of living conditions among the needy.

"The AMA should inaugurate and support programs of health education, including good maternal and child health practices, family life and sex education and the appropriate use of health care resources.

"The AMA should give impetus to broad and inclusive programs for the care of the unwed mothers."

With respect to statistics, the AMA "should provide leadership in a program to obtain national uniform registration statutes for births and deaths . . . promote efforts through the World Health Organization and other authoritative bodies to bring about uniform registration requirements and . . . truly comparable statistics . . . and support educational programs directed toward physicians concerning the value of accurate uniform reporting."

Regarding quality and availability of care, "State and component societies should evaluate existing maternal and child care resources and take leadership in the expansion and development of programs for delivering services in locations found to be deficient."

The report urged that, where feasible, "perinatal death studies be conducted on a communitywide basis or by a hospital staff or medical group for the purpose of reducing infant mortality and providing educational programs;" and also recommended that the AMA "stimulate research into the cause and possible prevention and control of 'crib deaths' of infants."

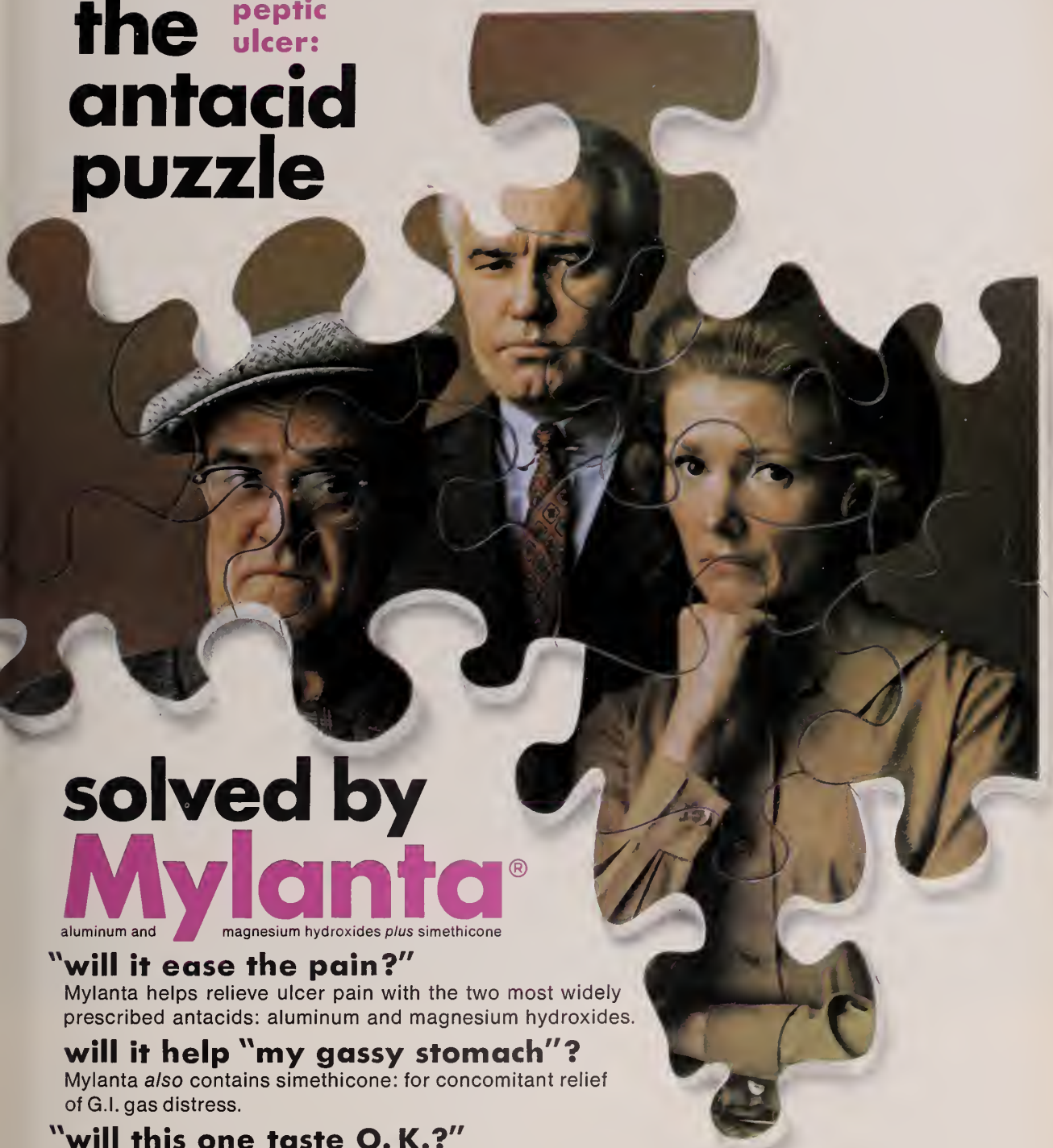
TRANSPLANTATION AND GENERAL THOUGHTS ON PATIENT CARE

A Judicial Council report was adopted on "Ethical Guidelines for Organ Transplantation." One of several important guidelines was, "When a vital, single organ is to transplanted, the death of the donor shall have been determined by at least one physician other than the recipient's physician. Death shall be determined by the clinical judgment of the physician. In making this determination, the

(Continued on Page 487)

the antacid puzzle

In peptic ulcer:



solved by Mylanta®

aluminum and magnesium hydroxides *plus* simethicone

"will it ease the pain?"
Mylanta helps relieve ulcer pain with the two most widely prescribed antacids: aluminum and magnesium hydroxides.

will it help "my gassy stomach"?
Mylanta *also* contains simethicone: for concomitant relief of G.I. gas distress.

"will this one taste O. K.?"
The *prolonged* acceptance of Mylanta was recently confirmed in 87.5% of 104 patients—after a total of 20,459 documented days of therapy.* *Danhof, I. E.: Report on file.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. *Dosage:* One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

Stuart
Division/Pasadena, Calif.
ATLAS CHEMICAL INDUSTRIES, INC.

a comprehensive hematinic



Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150 mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin (The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	7.5 mcg.
Iron, Elemental (as Ferrous Fumarate)	110 mg.
Ascorbic Acid (Vitamin C)	75 mg.
Folic Acid	1 mg.

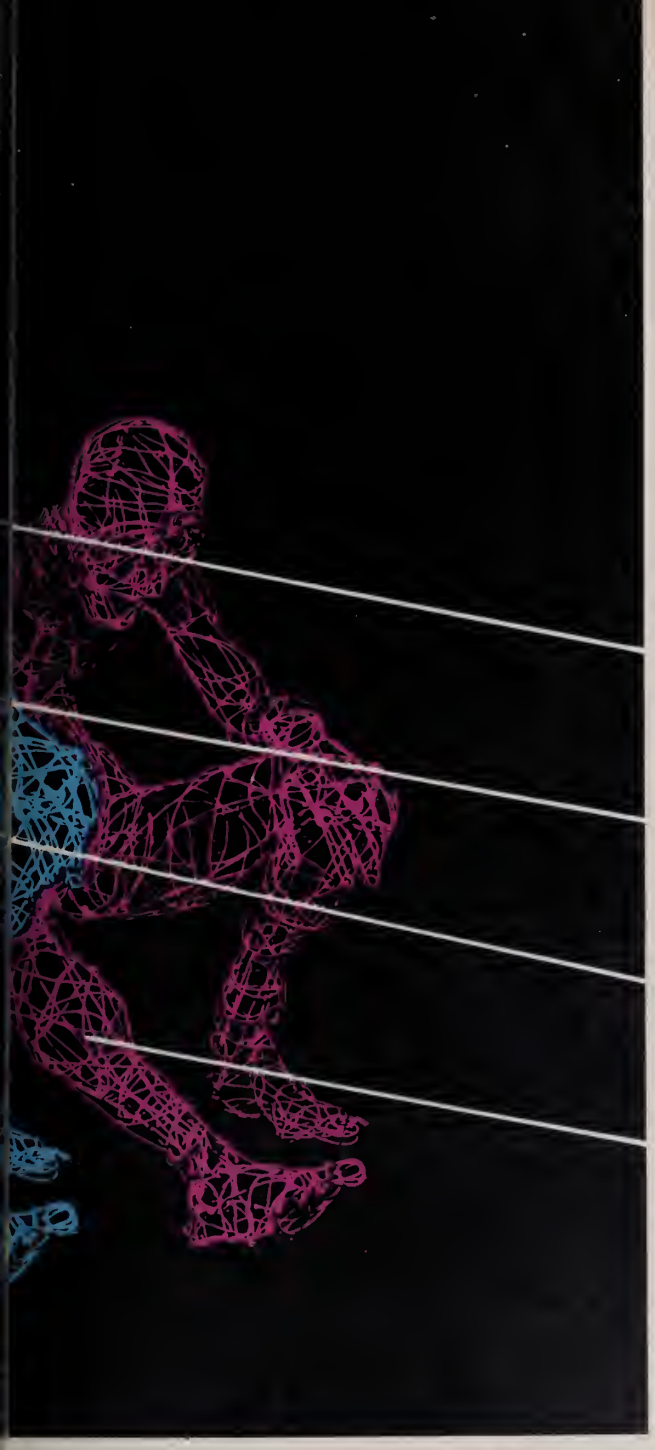
Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

Contraindications: Hemochromatosis and hemosiderosis.

Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

In pernicious anemia, the use of folic acid without adequate vitamin B_{12} therapy may result in hematologic remission but unchecked neurological progression. Adequate doses of vitamin B_{12} (parenteral or oral with potent intrinsic factor as in Trinsicon® [hematinic concentrate with intrinsic factor, Lilly]) usually prevent, halt or improve the neurological changes.

As with all preparations containing intrinsic factor, resistance may develop in some cases of pernicious anemia to the potentiation of absorption of physiological doses of vitamin B_{12}. If resistance occurs, parenteral therapy, or oral therapy with so-called massive doses of vitamin B_{12}, may be necessary. No single regimen fits all cases, and the status of the patient observed during follow-up is the final criterion for adequacy of therapy. Per



You can treat combined deficiencies with

Trinsicon®

—the multifactor hematinic

Vitamin B_{12} plus intrinsic factor (15 mcg. B_{12} activity)—helps provide adequate levels of this important vitamin.

Folic acid (1 mg.)—treats nutritional macrocytic anemias and/or malabsorption syndromes.

Ascorbic acid (75 mg.)—augments the conversion of folic acid to its active form and helps iron absorption.

Iron (110 mg.)—treats hypochromic anemia.

nical and laboratory studies are considered essential and are commended.

dverse Reactions: In rare instances, iron in therapeutic doses oduces gastro-intestinal reactions, such as diarrhea or consti- ıtion. Reducing the dose and administering it with meals will inimize these effects.

In extremely rare instances, skin rash suggesting allergy has llowed oral administration of liver-stomach material. Instances apparent allergic sensitization have also been reported after al administration of folic acid.

osage: One Pulvule twice a day. (Two Pulvules daily produce a andard response in the average uncomplicated case of perni- ous anemia.)

ow Supplied: Pulvules Trinsicon® (hematinic concentrate with trinsic factor, Lilly), in bottles of 60 and 500. [032568]

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choose an experienced candidate—
millions of doses prescribed

Benadryl®

(diphenhydramine hydrochloride)

The White band on Pink capsule combination is a registered trademark of Parke, Davis & Company.

Supplied in various dosage forms including Kapseals®, containing 50 mg. of diphenhydramine hydrochloride.

Parke, Davis & Company, Detroit, Michigan 48232

PARKE-DAVIS

A M A DELEGATES

(Continued from Page 486)

ethical physician will use all available, currently accepted scientific tests."

A Council on Medical Service report on automated multiphasic screening, approved by the House, pointed out that tests used in "a multiphasic screening program should be relatively simple to administer, easy to interpret, relatively inexpensive and require little time to perform." All such screening programs should be subjected to the five criteria suggested by the former National Commission on Chronic Illness: Reliability; validity; yield of information; cost; and acceptance by physicians, individual laymen and the community.

The House resolved, in connection with proposals for a national compendium of approved drugs, that "present quality standards imposed voluntarily by the American pharmaceutical industry should not be abridged or usurped by any federal agency, and . . . any drug compendium devised should be made available solely as a reference source of information."

The Board was directed by the House "to evaluate the practicality and feasibility of establishing a national health data banking system and to evaluate other aspects of data processing related to the practice of medicine."

The House adopted a Board report recommending AMA support for the use of the Slow-Moving Vehicle Emblem developed by Ohio State University for all vehicles, tractors, construction equipmen or horse-drawn vehicles moving less than 25 miles per hour.

By adopting a Board report, the House voted to "participate in a program of planning and action with other organizations concerned with architectural barriers to the handicapped" and requested state and county medical societies to encourage their members to become active in helping to alleviate such barriers.

The House resolved to continue AMA "efforts to safeguard and inform the medical profession and the public with respect to the treatment of obesity."

It also referred to the AMA's policy on chiropractic and urged state and local medical societies "to formally adopt the AMA Policy Statement on Chiropractic, or a somewhat similar expression" and "to alert the general public to the health hazard posed by the cult of chiropractic."

HOSPITALS

The House approved a Board report stating that communication with hospital Boards of Trustees has been supplemented by increasing the circulation of the AMA's publication "Medical Staff-in-Action" to include physician-hospital relationship committees of state and local medical societies and of state and local hospital associations.

A resolution was adopted that "state medical associations and state licensing and certifying agencies establish and maintain close surveillance of the certification and accreditation problems of small hospitals," which generally are not acceptable for Medicare patients, thereby denying benefits of the law to many persons among the rural aged.

Noting that new Standards for Hospital Accreditation are under way by the JCAH, the House resolved that the Board "direct the AMA Commissioners of the JCAH to arrange for the tentative draft of the new standards to be submitted to individual state associations for comment before final adoption."

The House again urged "that adequate representation of the medical staff on the voting membership of the hospital's governing body is the most effective mechanism for assuring a working communication, provided that the physicians serving on the governing board be nominated by the medical staff of the hospital."

Regarding use of paramedical personnel, the House recommended to the JCAH, AHA, and its state and local chapters and to hospitals and other related facilities "that the practice of medicine . . . be preserved as the responsibility of the physician and that paramedical personnel not be placed in the position of practicing medicine whether by consent, design or contract;" and recommended "to the state and county medical societies and hospital staffs that they call attention to the dangers of contractural agreements which remove the services of paramedical personnel from the supervision of the physician."

PUBLIC RELATIONS

A Board report was adopted that reproduced a statement by the AMA's public relations counsel, Mr. Philip Lesly. Titled "Considerations for Coping with the New Climate Involving Health Care," the statement pointed out many problems faced by the medical profession and urged that the "foundations of public relations for the profession" must be:

Practical — viewing each circumstance in terms of the consequences of any action or position.

Positive — AMA should be the leader of action and thought on medicine; not in the position of reating to the actions or statements of others.

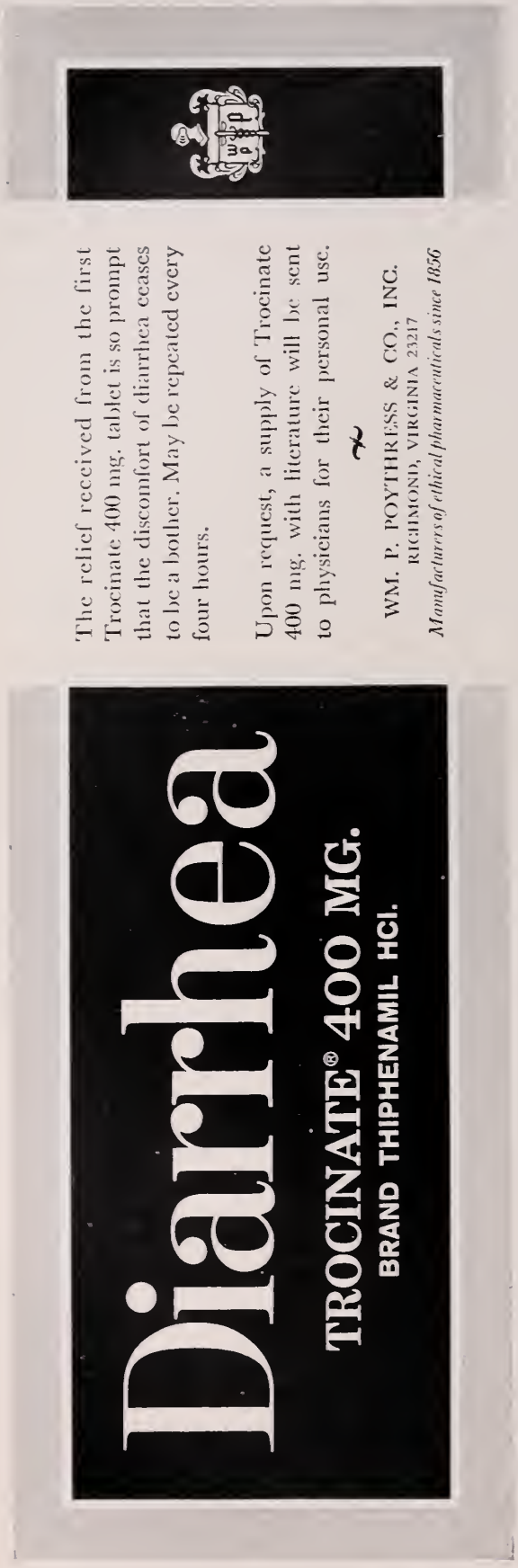
Anticipatory — AMA should be the master of change rather than its victim.

In the Initiative — fostering balanced, informed, widespread coverage of medicine and health care rather than to matters initiated by others.

Augmented by voices or respected laymen.

Selective — concentrating on activating AMA's programs and priorities, with full knowledge it will

(Continued on next page)



mean passing up many things that appear to need attention but are not part of the over-all constructive plan.

AMA FINANCIAL STATUS

The House accepted for information a Board report concerning "the fiscal uncertainties which lie ahead" for the AMA. It is anticipated, the report said, "that a substantial increase in the budget of the AMA will be necessary within the next few years if the AMA is to fulfill its mission. Major items such as the cost of printing and paper are rising sharply and the pressure of inflation has greatly increased the cost of providing AMA's normal services."

The report stated that the tax effect of the IRS regulations is not known at this time on the AMA's gross income of approximately $13 million annually from advertising in its publications before deduction of costs and allowable expenses.

The report pointed out that the Board "is not recommending an increase in dues . . . at this time, because it wants additional information regarding various matters affecting our financial situation before reaching such a decision."

The House adopted a resolution urging "positive action to encourage reduction of the expenditures of this Association" by "requesting the Board . . . to continue to take action to reduce, to the extent possible, the extraneous activities financed in whole or in part by the AMA" at all meeting of the House, councils, committees etc.; and requesting the Board to continue "to make recommendations as to consolidation or even abolishment of councils and committees" whose reason for creation may no longer exist.

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ONE SENTENCE ESSAY

Middle age occurs when you are too young to take up golf and too old to rush to the net.

— F. P. Adams



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Precautions: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression. Observe for signs or symptoms of peptic ulcer or ulcerative colitis. Discontinue at first sign of mental depression; keep in mind possibility of suicide. Exercise extreme caution in history of mental depression. May produce cardiac arrhythmias when used with digitalis and quinidine, or may precipitate biliary colic in patients with gallstones. Discontinue 1 to 2 weeks before surgery; inform the anesthesiologist in event of emergency surgery. Exercise caution in history of epilepsy. Discontinue 1 to 2 weeks before ECT.

Adverse Reactions: Drowsiness, skin rash, "hangover," systemic disturbances, increased salivation and gastric secretion, nausea, vomiting, increased intestinal motility, loose stools, angina-like syndrome, arrhythmias, bradycardia, flushing, hypotension, nervousness, paradoxical anxiety, rarely atypical Parkinsonian syndrome, central nervous system sensitization (manifested by dull sensorium, deafness, glaucoma, uveitis and optic atrophy), dryness of mouth, syncope or dizziness, epistaxis, purpura secondary to thrombocytopenia, asthma in susceptible persons, nasal congestion, weight gain, and impotence or decreased libido.

Usual Adult Dosage: Initially, 1 to 4 tablets daily for one week; maintenance, 1 to 2 tablets daily. When used with other antihypertensive agents, reduce dosage of both drugs about 50% and observe carefully for changes in blood pressure.

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Book Reviews . . .

HO VISTO MORIRE ME STESSO (I SAW MYSELF DYING). Come si puó continuare a far battere un cuore senza trapianto (How a Heart can be Kept Beating Without a Transplant) by Giocondo Protti, M.D., Longanesi & Company, Milano, 1968. Lire 1000.

Protti, an internship companion of the reviewer in Venice, Italy in far away 1921, was a man of versatile intelligence, a brilliant speaker and conversationalist, a painter, a lavishly entertaining gourmet, a skilled investigator heading a Tumor Center, producing, 30 years ago, valuable studies on enzymes and cancer.

He was born in Longarone, the town in Northern Italy which in 1963 was wiped out by the breaking of the Vajont dam. He lost his ancestral home and everything in it and suffered a great deal spiritually.

To show his emotional make-up and correlate it with subsequent events of his life, he relates that, when he was 14, he saw a beautiful girl of about his own age in a theater. He has recollections of feeling something like love, of rushing into the corridors hoping to see the girl again, out of breath, his heart pumping, his face red, worrying that the family would read in his behavior his inner feelings — only a souvenir, he says, but it was the same heart which will have the infarct 50 years later.

He ardently supported psychosomatic medicine at a time when it was officially ridiculed.

The plot of the book concerns a physician, himself, handling his own myocardial infarct and pulmonary edema as he would and did with any other of his patients.

He believes that the heart disorder is due to the brain (the mind moves the body), that the brain must be disconnected from the heart by a simple injection of one centigram of chlorohydrate of morphine on the spot, and that one must not just send the patient to the hospital, where he invariably arrives dead.

Apparently, this is not the official orthodox treatment in Italy or elsewhere. When, during one episode, he injected into himself, not one, but four hundred centigrams of morphine in 60 minutes, his physician friends were far from approving. In Italy the law aggravates the situation. Even a physician can be jailed if found with a syringe and a vial of morphine on his person.

He writes: ". . . at 50 I began to notice the first symptoms of the hurricane, which, like the others, has a feminine name, angina pectoris . . . at 11 p.m., alone, I felt as if a hot knife were entering my chest . . . I seize and chew a nitroglycerin pill . . . I was better immediately . . . I stopped, for good, smoking 40 cigarettes a day . . . I kept with me 2 vials of morphine and 2 plastic sterile syringes . . . I kept on chewing nitroglycerin pills while meeting important persons, while on the rostrum, etc.

". . . a Sunday in January I woke up at 7 a.m. after a night of little sleep and asthmatic attacks . . . at 9:15 I was dying . . . I rang for the maid . . . I told her to open the windows . . . to call some doctor . . . all absent on Sunday or too far off to come in time . . . the attack was sudden and ferocious . . . I could not make out what was happening . . . I remember seeing myself as one of my dying patients and saying, 'he died in my hands and I could do nothing to save him' . . . edema of the lungs was beginning . . . the maid understood she was to give me the injection and prepared the syringe . . . a far away doctor was contacted . . . he sent a recent graduate . . . the pulse was 150, the pressure 210 . . . the maid put the syringe in the hands of the doctor . . . I was delirious . . . I passed in review what I had accomplished in my life . . . a few minutes later I was better . . . I was saved . . . but it is so frightening to prefer death than to go through it again . . . the blueness of the skin disappeared and the pink (as described in my passport) returned . . . I began to laugh. What happened? The brain was stopped by the morphine, a harmless remedy for the heart even if a patient is moribund . . . 'Is there a doctor? A doctor' . . . in this way I revived two moribund men on a train.

"A friend, in a hasty departure from home, left his morphine and syringe in another coat . . . and died.

"A second episode . . . midnight . . . with the coming of sleep there also came a violent pain . . . I barely had time to motion to my wife . . . in the space of one minute she made the injection . . . I felt worse . . . I motioned to her to make another . . . I felt worse and worse . . . I saw everyone dead . . . it was not me, but the others dying . . . I sat down calmly, thinking the infarct was forming, this time, inevitably and the heart would stop at any moment . . . third injection . . . I was looking at my wife and wanted to say good-bye with a look that I was keeping for the last and that I would have always regretted if I did not die . . . 3 vials of morphine in 60 minutes . . . in extreme circumstances extreme remedies . . . I felt another bite, taking away any hope . . . fourth injection . . . after 70 minutes and 4 injections, which I do not believe any hospital would have given me, I felt better . . . I recovered . . . my thought first went to my father who induced me to take medicine instead of law . . . many physician friends came to examine me,

and all examinations showed a devastating condition; still they doubted that the 4 injections of morphine had saved my life, and they were, at any rate, too many, an exaggeration, a crazy thing, one was enough. They tried to destroy my whole psychosomatic build-up. I asked a colleague to give me a fifth injection to complete the detachment of the cerebral cortex from the heart. He did it, reluctantly."

Unfortunately, the gallant fight was over a few months ago for Doctor Protti.

Most interesting reading on a controversial therapeutic topic.

F. Ronchese, M.D.

* * *

GASTROENTEROLOGY by Henry L. Bockus and Former Colleagues at the University of Pennsylvania Graduate School of Medicine and School of Medicine. Volume III. Second Edition. W. B. Saunders Company, Philadelphia, 1965. $30.00

The first edition of this monumental work in three volumes appeared in the period 1943 to 1946. Twenty years later the second edition was completed, the final volume appearing in 1965. This compendium by many authors will be the classical work on gastroenterology for some time to come. Volume III, devoted to intestinal parasites, the liver, the biliary tract, pancreas, and the so-called secondary gastrointestinal disorders was completely rewritten.

The section on secondary disorders contains much new material and a number of important concepts developed during the interim since the publication of the first edition. These chapters include (1) the psychiatric aspects of gastrointestinal function and disease; (2) a clinico-physiologic correlation of functional disorders; (3) intimations of autoimmunity in digestive disorders; (4) collagen disorders affecting the gastrointestinal tract; (5) gastrointestinal manifestations of endocrine disorders; and (6) dermatologic-gastrointestinal interrelationships. These important additions to the text constitute a link between gastrointestinal function and disease on the one hand, and systemic disease on the other.

The printing format and illustrations are consistently of high quality. This three volume work should be on the shelves of all medical libraries. It has a place, as well, in the office library of the surgeon and the internist, as well as the gastroenterologist.

Seebert J. Goldowsky, M.D.

ONE SENTENCE ESSAY

If a man can't get adequate pleasure out of what was good enough for Grandfather, we should lift him down from his hang-up rather than tell his wife to climb up on the chandelier with him.

. . . from one of our throw-away contemporaries



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Guest Paper —

DIABETES MELLITUS*

Morbidity Results When Glucose Is Produced in Excess or Not Normally Disintegrated.

SYLVANUS CLAPP, M.D., 1815-1879. *Received M.D. at Dartmouth College in* 1836. *Consulting Physician, Rhode Island and Butler Hospitals. President of the Rhode Island Medical Society* 1864-1866. *Practiced in Pawtucket, R. I.*

This interesting review of the status of diabetes mellitus in 1854 has never before appeared in the formal medical literature. The Communications of the Rhode Island Medical Society did not begin publication until 1860. This paper was published by the Society in pamphlet form and printed in Pawtucket. Oddly enough the excellent library of the Rhode Island Medical Society does not possess a copy of the original. It is reprinted here, somewhat abridged, as part of a Symposium on Diabetes Mellitus. See also Editorial on the subject.

The Editor.

A summary of what is now known of the disease called *Diabetes Mellitus* I have thought might be interesting to the Fellows of this Society. In addressing you on this subject, it must not be presumed I could give you a full statement of all the views entertained by different writers, or speak fully of all its relations, physiological and pathological, for it would furnish us with sufficient material for an extended treatise. . . .

HISTORICAL

Celsus looked upon the disease as one of renal irritation; Aretus gave the most minute and clear description of it, of any of the ancient writers. He considered it a sort of colliquative diarrhea, which melted the flesh and limbs into urine. He says "this colliquation of the flesh and limbs passes off by the kidneys and bladder; for the patients never cease voiding their urine, but as from the opening of water ducts, the stream is perpetual." Galen looked upon the disease as one of renal irritation, and bearing the same relation to the kidneys and bladder, as diarrhea to the stomach and intestines. . . .

The views of Galen and Aretus were entertained with very little alteration until the time of Thomas Willis, who lived in the time of Charles II of England; and according to all writers, was the first of all men from the beginning of time, who tasted the urine of a diabetic patient. To him, then, should be awarded the praise of first discovering the saccharine property of the urine. He says "the subjects of this disease pass more urine than the whole quantity of fluids taken into the body; they have, besides, a constant thirst, and a slow kind of hectic fever always on them. It is very far from true, as some authors affirm, of the drink being again discharged with little or no alteration; for the urine in all that I have seen (and I believe it will universally be the case) is different not only from their drink, and from other fluid in the animal body, but 'was like as if it had been mixed with honey, or with sugar, and had a wonderfully sweet taste."

He acknowledges the fatality of the disease, although he thinks it curable at first, and enumerates several remedies. He thought the blood was so much dissolved, as to have its parts considerably separated, so that it could not be again restored.

Sydenham, who was contemporary with Willis, gave a very clear and minute description of the disease, and, adopting the same views concerning the nature of the malady, says:

"Diabetes is rather an immediate affection of the blood than of the kidneys, and thence derives its origin; for the mass of the blood becomes, so to speak, melted down, and is too copiously dissolved into a state of serosity, which is sufficiently manifest from the prodigious increase of the quantity of urine, which cannot arise from any other cause, than from this solution and waste of blood."

This opinion being promulgated and maintained by two of the brightest luminaries of the healing art, was extensively adopted, and continued to be the prevailing opinion until Dr. Rollo's work appeared. Dr. Rollo attributed the disease to a morbid condition of the stomach. He says "It consists in an increased action and secretion, with a vitia-

(Continued on next page)

*Read before the Annual Meeting of the Rhode Island Medical Society on June 7, 1854.

tion of the gastric fluid, and probably too active a state of the lacteal absorbents; while the kidneys and other parts of the system, as the head and skin, are only affected secondarily."

Nothwithstanding the able and excellent article of Dr. Rollo, Dr. Latham afterwards adopted the opinion of Drs. Willis and Sydenham. These two theories continued to receive the successive support of many of the ablest and most distinguished pathologists for many years. In the year 1778, Mr. Charles Darwin, an ingenious physiologist, presented a bold paper before the Aesculapian Society of Edinburgh, endeavoring to account for the disease by a retrograde motion of the lymphatics. He considered that all the branches of the lymphatics sympathized with each other; and that the greater part of the chyle passed off by the kidneys, without entering the general circulation. He also proposed a new name for the disease,—"*Chyliferous Diabetes.*"

The more distinguished physiologists, however, of his day, never become converts to his hypothesis. They adopted the same notions concerning this hypothesis with Mr. Criuckshank, that it was a mere supposition depending upon no experiments.

Prof. Frank, in the year 1782, without abandoning the hypothesis of Darwin, endeavored to modify it so as to make it appear less objectionable. He gives up the doctrine of retrograde motion, but conjectures that it is dependent upon excitement of the lymphatic system generally; and that the urinary combines with this general excitement, and that it is dependent upon some specific *virus,* which excites an inextinguishable desire for liquids, and alludes, in illustration, to the virus of the Dipsas, a serpent of the ancients, which was proverbial for producing this effect. He supposed that from this irritability of the lymphatics, every other part of the system suffers in consequence, and that the chyle is hurried forward, together with the cutaneous exhalation, to the kidneys which concurs in the same diseased action, and constitutes the flow of saccharine urine. His opinions were received with no more favor than Darwin's. He did not attempt to explain why the urinary secernents, in this general excitement, should be so much more successful than those of other organs, the skin or intestines.

Another hypothesis placed the disease primarily and idiopathically in the kidneys. The kidneys were the organs first suspected, and the Greek writers supposed them to be in a state of relaxation and irritability. To this state was ascribed their morbid activity; while their weakened and relaxed condition allowed the serum of the blood to pass off through the patulous mouths of the excretories, in a crude and inelaborate form, as the food does in lientery.

Galen, has, perhaps, until recently, been the hypothesis most generally admitted. Bonet, Reysch, Cruickshank and Dr. Mason Good, embraced these views.

Dr. Marsh ascribed the cause to a morbid condition of the skin and interruption of its functions.

Dr. Mead thought it depended on a morbid state of the liver and bile.

Dr. Baillie, to a deranged action of the secretory structure of the kidneys by which the blood there is disposed to new combinations. He, at the same time, supposed the chyle was imperfectly formed, and caused the blood to be more readily changed to saccharine urine by the kidneys.

Dr. Lubbock, considering the coincidence of the dry skin in connection with Diabetes, formed his theory of the disease. He says "it has been proved that sugar is, for the most part, composed of carbon, oxygen and hydrogen, united in a certain ratio, and it appears, by the experiments of Cruickshank and Abernethy, that besides the occasional aqueous fluid discharged daily from the surface of the body, about three gallons of carbonic acid are also lost to the system by the perspirable matter. Now supposing, as happens in Diabetes, this perspirable excretion or carbonic acid, is suppressed and retained in the system; it is probable that the carbon and oxygen of the acid, so retained, by entering into a due combination with some portion of the hydrogen of the animal body, may tend to the production of the saccharine urine; and as the carbonic acid is the general product of the vegetable world, it would follow that its retention in the animal body may produce the phenomena of the defective assimilization, characterizing Diabetes in the formation of sugar."

EARLY PHYSIOLOGICAL STUDIES

These embrace nearly all the hypotheses concerning the nature of this disease entertained by most writers, until the essay on Diabetes by McGregor, and an experimental essay on the physiology of the blood by Dr. Maitland of St. George's Hospital. . . .

From the essays of McGregor and Maitland, we glean the following:

That the stomach, in Diabetes, has the property of forming sugar from animal as well as from vegetable food;

That sugar is contained in the blood, urine, saliva and feces;

That more urea is passed than in health.

No urea has been found in their blood, though albumen has been found in their urine.

Found

In the blood in Diabetes Mellitus.	*In urine*
Excess of sugar.	Excess of sugar.
Excess of water.	Excess of water.
Urea unknown.	Excess of urea.

Analysis of the blood in Diabetic patients has been often made, by various individuals, and with very different results. While some detected large quantities of sugar, others were unable to detect any. It was natural enough to suppose the blood became deranged by this morbid drain. We might at first suspect *inspissation* of the blood to occur in Diabetes, when the flux of water is so great; but when we remember the high specific gravity of the urine in this disease, and the great quantity of solid matter running to waste, we are prepared to believe the contrary. The solids of the blood are relatively diminished, and despite the immense elimination of water, the specific gravity of the blood is below its standard. In fact, the only disease, I believe, in which the excretions gain on the fluidity of the blood, so as to inspissate it, is cholera . . .

The analyses of Ambrosiani and Maitland . . . have proved the existence of sugar in the blood of Diabetic patients, the specific gravity of the serum of which may rise to 1060 from its presence, and McGregor has also established the fact of its unusual production during the process of *digestion.*

Bouchardat has satisfactorily ascertained the fact, that the sugar in the blood of Diabetic patients is at its maximum during the process of chylification, and that it almost disappears after a long fast.

The contradictory results obtained by phyisiologists with regard to the presence of sugar in the blood is due chiefly, according to M. Bouchardat, to the following circumstance.

If you examine Diabetic urine at different periods of the day, you will find that an hour or two after meals it is abundantly secreted, and contains a considerable proportion of sugar, which successively decreases for the next twelve or fifteen hours; beyond this term, if the patient has eaten nothing, no trace of sugar will be found in the blood. By two comparative analyses, M. Bouchardat sustains his position. In a patient bled at 9 o'clock a.m., who had fasted since 5 o'clock the previous evening, no trace of sugar was detected. In another patient, bled two hours after a light breakfast, there was unequivocal evidence of sugar in the blood. . . .

The urine not only increases in *quantity* in this disease, but in *density*. Instead of being within 1010—1020, which are probably the limits in health, the specific gravity usually ranges between 1035—1045, and in some instances, as stated by Maitland, as high as 1060. The discharge of solid matter from the blood must, therefore, be very great. Dr. Christison has calculated that 2½ ounces of solid matter are discharged daily from the blood of a person in a state of health, of which nearly one half is urea. . . .

[In] a case related by Dr. George Budd and treated by him in the hospital . . . 20 ounces of solid matter were daily discharged from the blood, of which a great proportion was sugar . . .

INCIDENCE OF THE DISEASE

It is not a frequent disease in the New England States . . . .The population of Massachusetts, by the last census, was 830,066 native inhabitants, 160,909 of foreign birth, and 3,539 unknown; making, in all, an aggregate of 994,514 . . . Out of this population, 18,482 deaths occurred in the year 1852. *Twenty-two* only of these were from Diabetes. . . .

There occurred between the ages of 5 and 10 years 1 f.; 10 and 15, 1 f.; 20 and 30, 6 m. and 2 f.; 30 and 40, 3 m. and 2 f.; 40 and 50, 3 m. and 1 f.; 50 and 60, 1 m.; 70 and 80, 2m.; none over 80, none between 60 and 70, and none between 15 and 20 years of age. Fifteen of these were males and 7 females. . . .

Between the ages of 20 and 30, 8 died; being the greatest number at this age. . . .

From a table of the deaths occurring in Boston for the year 1853, as published in the Boston Medical and Surgical Journal, but *one* death is reported from Diabetes out of 4,276 deaths.

We see by these statistics that it may occur in early life, but that it is most frequent when the body is in full vigor . . .

CLINICAL CHARACTERISTICS

It not unfrequently comes on slowly and insidiously, until the large quantity of urine voided is first noticed by the patient, together with the thirst, which at times is inordinate. These symptoms go on increasing until the quantity voided is sometimes very great, and the thirst becomes insatiable, particularly during the night. The urine has a straw color, and smells like the second crop of new mown hay. The amount has been known to exceed seventy pounds in some rare instances, in the course of twenty-four hours. Dr. J. L. Bardsley, in his hospital facts and observations, relates two cases, one of thirty-six pints, and one of thirty-two pints. . . .

We consider the excretion of sugar by the kidneys essential to constitute the disease. It has been considered that Diabetic urine is always sweet. But the urine of the same patient, at different times, may contain tasteless and sweet sugar. . . .

CONCEPTS OF BENCE JONES

Dr. H. Bence Jones reasons thus: "The greater portion of the starch we take passes into dextrine; all the dextrine becomes sugar, and all the sugar is converted into vegetable acid previous to its being oxidized into carbonic acid. The changes which occur in health may be represented by the following series; starch, dextrine, sugar, vegetable acid, carbonic acid."

(Continued on next page)

The disease Diabetes, he considers "arises from the arrest or stoppage of these healthy and necessary changes. The series of changes is stopped at the sugar; from some cause, the conversion of the sugar into vegetable acid and carbonic acid does not take place; and the whole series of changes may be indicated by the terms starch, dextrine, sugar."

In *health,* then, we have these changes, starch, dextrine, sugar, vegetable acid, carbonic acid.

In *Diabetes,* starch, dextrine, sugar.

This insipid sugar was noticed as early as 1810 by Dupuytren and Thernard; since then, by Bouchardat and Simon.

Dr. H. Bence Jones says "this insipid sugar *resembles* sugar of milk in its insipidity. It *differs* from it in not giving rise to mucic acid, and undergoing fermentation. The converson of the insipid sugar into grape sugar, by the effects of acids, indicates its place among the sugars, and makes it probable that starch, in its passage through the system, undergoes this change also; and thus the whole series at present known will be starch, dextrine, insipid sugar, sweet sugar, vegetable acid and carbonic acid."

These cases are well named *Diabetes insipidus.* An *excess* of urine never should be called Diabetes insipidus, unless we are sure this tasteless sugar is present, and this can be pretty well ascertained by the quantity and specific gravity, which is usually sufficient to distinguish it from *diuresis.*

The formation of sugar in the process of digestion, and the absorption of this sugar into the blood, were therefore considered cardinal facts in the pathology of Diabetes; and to explain these, must be the prime object of all theories of this disease. Let us now see with what success this object has been attained. And this leads use to the interesting researches of Claude Bernard, before alluded to.

STUDIES OF CLAUDE BERNARD

The name of Claude Bernard stands foremost among living physiologists. He has advanced the science of physiology more than any other man of our own times, by his difficult and important experiments on living animals; elucidating many important and difficult problems in the phenomena of life. He was a pupil of the celebrated Magendie, and, of course, derived from him much of his ready tact in operating successfully on living animals.

From the experiments of Dr. Beaumont on Alexis St. Martin, many years since, in our own country, other physiologists have taken the hint, and performed similar experiments on the lower animals; and thus we have been made acquainted with the peculiar functions of most of the organs in the human body.

Comparative physiology, as taught and exhibited by M. Bernard, has led to some brilliant discoveries; but the most brilliant of all his physiological achievements is the discovery of the formation of *sugar by the liver.* It is not enough for us to mention this fact merely, but to speak of it in the highest terms; indeed, we cannot estimate too highly the zeal with which he pursued his researches, or the sagacity he displayed in interpreting their results. Pathological phenomena first drew his attention to the subject.

It appeared to him a remarkable circumstance that Diabetic patients, while restricted most absolutely to azotized food, should yet continue to pass large quantities of sugar with their urine. Before entering more definitely on the discovery of the formation of sugar by the liver, and another discovery by Bernard and Barreswell, (the hepaticorenal circulation,) I ought to consider for a moment some of his researches respecting the digestion and assimilation of food.

A very interesting review of nearly all the physiological discoveries of Claude Bernard has appeared . . . from the pen of Harvey Ludlow. He has made so clear and succinct a statement of his labors, I have thought proper to quote largely from this article. . . . "One of the most important consequences of these discoveries has been the establishment of the doctrine, that animals, like vegetables, are endowed with the power of transforming one ternary principle into another, and also of changing quaternary principles into ternary, by eliminating nitrogen from the former and converting them into sugar and fat; in short, that the power of chemical *combination,* as well as of chemical *destruction,* has been conferred alike on animals and vegetables. Other observers have contributed in no small degree to the recognition of this *important truth.* But the inquiries instituted by Bernard with reference to the formation of sugar in the liver, has resulted in proving that such transformation is a *constant* and *habitual* process of the animal economy; and the evidences of its operation may be detected in almost all the vertebratae and in a large number of invertebrated animals."

Saccharine matters, after being in part changed into lactic acid, together with it, are absorbed by the veins of the stomach, the fat, set free, is carried through the pyloric orifice of the stomach, with the other unchanged alimentary matters, into the duodenum. In the *small intestines,* the *bile* forms an emulsion with the fluid fat; this is absorbed by the lacteals.

The pancreatic secretion is supposed to act on the starch, and converts it into dextrine and glucose. The mesenteric veins absorb the lactic acid, dextrine and glucose, and other soluble matters.

In the large intestines, the same process of ab-

sorption goes on; the only chemical change being the formation of lactic acid from the cane and Diabetic sugar, which had passed unchanged from the upper part of the tube. The matters taken up by the veins of the stomach and intestines, being conveyed by the vena porta of the liver, the superfluous glucose, and other ingredients, are again returned to the intestines in the bile, to be again absorbed and conveyed to the liver, to go through the same changes; thus giving time for those transformations to be effected in the blood which are necessary to complete assimilation. When more substances, not prepared for entering into the blood, are carried to the liver than that organ is capable of throwing off, the kidneys take on a part of its action, and glucose that has got furtively into the circulation, is excreted with the urine. . . .

GLUCOSE FORMATION IN LIVER

We come now to the most brilliant discovery in physiology for many years — the discovery of the *formation of sugar by the liver*. This discovery of Bernard, to use a current phrase in physiological science, must be admitted as a *finality* in medicine. It has been confirmed in the laboratory of Giessen, and by other chemists. He was led to institute inquiries from certain pathological phenomena which occurred in Diabetic patients, when fed exclusively on azotized food, i.e., they still continued to pass large quantities of sugar. He commenced a series of experiments, which were continued vigorously for two years, assisted by M. Barriswill. They were laboriously and perseveringly continued through this time. Of the extent of his researches, we can judge when we take into consideration that he has demonstrated that sugar is formed by the liver in the mammalia generally, both carniverous and gramniverous, in all birds, in fishes, both osseous and cartilaginous, and in the reptilia.

Bernard commenced his experiments in the following manner, with two dogs. The first was killed while active digestion was going on, after being fed on mutton and the bones of poultry. Sugar was found in the blood collected from the heart, while no traces of sugar could be detected in the stomach, intestines or in the urine.

The second dog was kept two days without a particle of food, then suddenly put to death. The blood again from the cavities of the heart afforded serum containing sugar, while no traces of sugar could be found in the stomach, intestinal canal or urine. These two experiments we clearly see settle the fact, that the sugar was foound in the blood, independent of the nature of the food the animal was fed on, or the changes produced by digestion. We at once perceive that his next experiment would be to determine the source whence this sugar would be derived. We will now follow him, step by step, and see how he arrives at this brilliant discovery.

Again his experiments are performed on the canine race. A dog was killed seven hours after having heartily eaten of meat and bones. The abdomen was opened as speedily as possible. The digestive organs were found turgid with blood, and the lacteals filled with chyle. Blood was collected from the portal vein and from the cavities of the heart. Chyme was taken from the stomach and intestines, and chyle was collected from the thoracic duct. These were preserved separately, and carefully tested for sugar. There was none found in the chyme or chyle, but a large quantity was yielded by the portal blood, and a less quantity from the cardiac cavities.

In the second experiment, again the dog was kept for three days from all food, and the abdomen examined speedily after death. The digestive organs, instead of being turgid, were pale and anemic. The lacteals were full of chyle. The sugar was found, as before, in the cardiac cavities on the right side, and in the portal vein, although less abundant than in the previous experiment; while none was found in the chyle. These experiments were repeated with like results many times. One step is now satisfactorily taken, but whence the sugar? Here it is found, but whence its source?

From animals fed exclusively on an amylaceous diet, and from those confined entirely to an animal diet, he obtained blood from the right auricles of each by means of a syringe introduced into the jugular vein, and tested the serum for sugar; in each he found sugar, whether they had been well fed or whether they had taken no food for days; whether subsisting on nitrogenized or non-nitrogenized substances. Yet whence the sugar?

He next examines the contents of all the venous trunks, the vena porta (taking the precaution to tie it immediately after opening the abdominal parieties near the liver, so as to prevent the reflux of blood from it,) the inferior and superior cava, the jugular, &c., and no where could any sugar be detected but in the hepatic veins, in the ascending cava, and from thence to the right auricle. There was no trace of sugar in the blood flowing into the liver, nor in the pulmonary veins. The conclusion, of course, was, that it was *formed* in the liver, and *destroyed* in the lungs, — that there were two sources from which the system obtained sugar, one from the aliments, the other from the liver, as one of its proper normal secretions. He carried his investigations still further. He examined the principal organs of the body, by slicing them and washing them free from blood, and the liver was the only organ in the body which yielded any evidences of sugar, with the exception of the lungs, where he

(Continued on next page)

found a small quantity. In the liver it was abundant. . . .

M. Vernoise, with the object of testing the validity of M. Bernard's researches as well as extending them, has recently submitted one hundred and seventy-three livers to examination, with the following results . . . That sugar constantly exists in the human liver, independently of alimentation. He found it in a case in which no food had been taken for fifteen days. . . .

CENTRAL NERVOUS SYSTEM CONTROL

[Bernard] proved that the sugar found in the liver was a secretion, by showing the influence of the nervous system over its production; as an irritation of the opthalmic branch of the fifth pair leading to the lachrymal glands produces a copious flow of tears, so a slight irritation produced with a sharp pointed instrument applied to the medulla oblongata at the point of origin of the pneumogastric nerve produces an increase in the secretion of sugar, so much so that a large quantity is soon detected in the urine. In fine, Diabetes is produced artificially. . . .

Although the formation of sugar by the liver is under the nervous influence, the *destruction* of it is not. M. Bernard, by a single experiment, showed that it was a chemical phenomenon. He cut the pneumogastrics of an animal and injected some grape sugar into the blood, and found that it was consumed, as in the case of integrity of the nerves. Sugar in the blood also disappears when in contact with air out of the body as well as in the lungs. M. Bernard believes that the usual alkalinity of the blood favors the consumption of the sugar, but it is not the true cause. . . .

CONCEPTS OF GLUCOSE METABOLISM

In an able and interesting letter from Prof. Samuel Jackson, of the University of Pennsylvania, written to my friend Dr. W. O. Brown, and published in the Boston Medical and Surgical Journal, I find the following views:

"In health, the portal blood entering the liver contains no saccharine substance; it is always found in the blood of the hepatic veins, as it issues from the liver, and in the blood taken from the right cavities of the heart. The blood taken from the left cavities of the heart and the vessels of the general circulation, yields no evidence of glucose or saccharine matter.Thus the sugar formed in the liver disappears in the lungs; it is decomposed in the pulmonary circulation. Glucose, or Diabetic sugar, is decomposed in the presence of oxygen, alkaline substances, nitrogenous bodies and water. These are present in the lungs, and in health the saccharine matter, a product of the action of the liver, is chemically destroyed by the respiratory process. It is most probably first converted into lactic acid, which, under the above stated conditions, is instantly broken up, its carbon becoming oxydized and converted into carbonic acid; its hydrogen, combining with oxygen, forms vapor of water, both of which products are eliminated in expiration, while the heat evolved serves to maintain the blood at its normal temperature, 98 to 100 deg. F. The functions of the liver and lungs are seen, in this respect, to be antagonistic. What the one produces, the other destroys. The glucose of the liver is thus prevented from entering into the circulation and being diffused throughout the economy. . . .

"What are the circumstances that impede the healthy action of the lungs from decomposing the glucose manufactured in the liver, and introduced into the lungs from that organ? Mialhe asserts it is the deficiency or absence of the alkalinity of the blood. On this hypothesis is founded the treatment of the disease by alkalies."

Reynose, Dechambre and others, contend that the disease depends upon some defect in the respiratory process. M. Bernard's views you already have, that it is attributable to a direct nervous action on the liver.

METHODS OF TREATMENT

TREATMENT.—This, after all, ought to be the end and aim of all scientific medical researches. Various specifics have from time to time been recommended, but thus far all trials have failed.

1st. The Permanganate of Potash has lately been proposed by Mr. Sampson. He relates a case in which it appeared beneficial. . . . Dr. W. R. Basham tried it in two cases. During the administration, the amount of urine diminished, but the sugar increased. Dr. Wood of Philadelphia has tried yeast with some advantage. Dr. Gray of Glasgow has tried rennet. These remedies have been tried on the principle that, as they convert sugar out of the body into acid products, they might bring about analogous changes in the stomach.

2d. Those agents that would retard the formation of glucose. Certain substances possess the property of arresting the saccharine, vinous and acetous fermentations. These are glycerine, creosote and sulphite of soda. These agents thus far appear of doubtful efficacy.

3d. Opiates. These agents are certainly palliatives, and by diminishing the excitement and irritability of the nervous centres, are *very beneficial.* They usually relieve thirst, diminish the amount of urine, and relieve the obstructed perspiration of the skin.

4th. The acids, more particularly the hydrochloric acid, which also relieves the thirst, and appears to aid the digestive process and diminish the

quantity of urine. This remedy has been recommended by Dr. Owen Reese. A case is related in the Medical Observatory, Feb., 1842, cursed with hydro-chloric acid.

5th. Diaphoretics. These, in conjunction with opium, are always beneficial. Warm baths, flannel clothing. This latter remedy should always be strictly enjoined; it always appears to be of use.

6th. Ammonia and Alkalies. The testimony of all more recent writers on this disease is in favor of this class of remedies, particularly the carb. ammo. Of the *modus operandi* of this class of remedies, little is known beyond what is hpothetical. Mialhe states that the blood is destitute of the alkaline salts; and he affirms that the ultimate conversion of the sugar formed out of the food into products capable of being eliminated by the respiratory function, is not effected in consequence of the deficiency. To supply this defect, should be the leading principle in the treatment of this disease.

Whether we adopt this theory or not, it has been more beneficial than any other. A well regulated diet, limited as much as possible to animal or nitrogenous food, in combination with the steady and perservering use of the carb. ammo., together with flannel clothing, has effected more than any other plan of treatment. Bouchardat ranks clothing next to diet. The intelligent co-operation of the patient is necessary, in order that he may refrain from bread and vegetables. It is necessary that the patient should deny himself from all articles of food known to be injurious.

Spirits, as brandy, whiskey and rum, usually contain no traces of sugar, and can be prescribed. Claret contains none. Porter contains twenty-three grs. to forty, of saccharine matter to the ounce. Hence porter is not admissible.

M. Bouchardat, who has seen more of this disease than any one, says milk in injurious.

Dr. H. Bence Jones, on account of the termination so frequently by phthisis, and on account of the emaciation, has used cod liver oil, and, as he affirms, with great advantage; all gained in flesh, and the urine diminished in quantity, yet the sugar did not disappear....

It has often been observed that in fat persons the disease progresses much slower than in those of the opposite condition.

Quinine, in combination with iron, has been beneficial. Ox gall, strychnia, arsenic, colchicum, and iod. potass. have been recommended. And *very recently* a new remedy has been proposed, and it would seem with some degree of plausibility;—the protoxide of nitrogen, or nitrous oxide, discovered by Dr. Priestly.

FATAL OUTCOME A CERTAINTY

When we consider that this saccharine material is a true physiological product, and only connected with a morbid condition, when produced in excessive quantity, or not normally disintegrated, and when the most careful examinations can find no pathological condition to account for the disease, we may hope that recovery will soon be as certain, as the fatality that now attends it. Then we can truly say we hold the "golden compasses" of the poet, with which we mark off the boundaries of this disease, and fill up its circumference with the appropriate remedies.

In the selection of our remedies for the cure of diseases, we do not point our patients to the crystal fountain, and tell them there is all that is necessary to cure the various "ills that flesh is heir to." We do not say the vegetable kingdom alone furnishes us with all the remedies necessary to cure disease; neither do we say to them, one system alone guides us in the selection of our remedies. We do not say one theory, and the same treatment, are adapted to every species of derangement in the functions of the various organs. We are governed and sustained by a *higher* degree of *erudition* and *moral principle.*

We select our remedies from the modest flower that rises by the way side, and exhales its sweetness on the ambient air to the sun, out of which orb come the never ceasing rays of light that break on the outermost limits of the universe. Not a tree, or a leaf, or a stone, or a river, out of which virtue of some kind is not found. Not a substance which has not its attractive or repellent forces, and which does not impart either health or poison. Could we see into the life of all things, and know all the properties they possess, how they act and react on each other, the grandest conception of the imagination could hardly outrun the sober truth of philosophy.

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STRUCTURE AND FUNCTIONS OF THE ISLETS OF LANGERHANS*

Recent Studies Elucidate Mechanism of Insulin Secretion and Nature of Diabetes.

PAUL E. LACY, M.D., *of St. Louis, Missouri. Mallinckrodt Professor and Chairman, Department of Pathology, Washington University, St. Louis, Missouri*

In the past the etiology of diabetes was believed to be the result of pathologic changes in the islets of Langerhans following the demonstration by Minkowski that diabetes could be produced in the dog by total pancreatectomy. Gradually this concept faded into the background and was replaced by a search for possible inhibitors of insulin in the serum. As this work progressed, numerous inhibitors were found in diabetic as well as normal individuals, thus leading to a gradual decline of interest in this possibility as the etiology of diabetes mellitus in Man. The circle has now been completed, and once again attention is focused upon the islets of Langerhans as the site of the basic pathologic change in diabetes mellitius. I believe that this resurgence of interest in the islets will result in the elucidation of the etiology of diabetes during the next few years. The purpose of this presentation is to review some of the advances that have been made concerning the normal structure and function of the islets as well as indicating some of the pathologic changes observed in the pancreas in diabetes mellitus.

ELECTRON MICROSCOPY

A tool that has been extremely valuable in studying the islets of Langerhans is electron microscopy. With this tool it is possible to visualize the internal structure of the cell and to follow the changes in the organelles of the cells during different functional states. Utilization of electron microscopy in conjunction with experimental procedures in various animals has provided new information with respect to the mechanism of formation, storage, and release of insulin from the beta cell. Insulin is formed within the endoplasmic reticulum of the beta cell appearing first as an amorphous material between the lamellae of the reticulum. Subsequently the lamellar arrangement of the endoplasmic reticulum is converted into numerous sacs within the cytoplasm of the beta cell, and these also contain this amorphous substance, which is probably a precursor of insulin. Subsequently distinct beta granules containing biologically active insulin are observed within smooth membranous sacs in the cytoplasm. From *in vivo* studies it has not been possible to determine whether the granules pass through the Golgi apparatus or whether the ribosomes on the surface of the sacs are stripped off in the cytoplasm leaving a smooth membranous envelope around the beta granules. Regardless of whether the Golgi complex is involved in the formation of the granule, these structures move around in the cytoplasm until the beta cell is stimulated by either glucose or tolbutamide. Following stimulation by either of these two agents the granules with their encompassing sacs move to the surface of the cell where the membranous sacs fuse with the cell wall and rupture, and the granules are liberated into the extracellular space where they undergo dissolution . The insulin released from the granules then traverses the basement membranes and capillary endothelium and enters the bloodstream. This process of secretion is called emiocytosis and is common to other cells which store their secretory products in the form of granules.

We had hoped that it would be possible to establish a difference in the mechanism of action of tolbutamide as compared to glucose. Unfortunately both of these agents use the same mechanism of secretion, emiocytosis, and there was no evidence of dissolution of granules within the cytoplasm following the administration of tolbutamide. This information obtained from *in vivo* studies using electron microscopy is valuable, but still leaves unanswered many basic questions concerning internal biochemical controls of insulin formation, and concerning storage and release in the normal and in the diabetic state. What causes the beta granules enclosed in their sacs to move to the surface of the sac membranes? How does glucose initiate the formation of insulin on the one hand and the release of insulin on the other? How does tolbutamide cause the release of insulin from the beta cell, and how does it differ in its action with glucose, or how is it similar in its action to glucose? These are basic questions, and the answers to them will provide immediate insight into the etiology and pathogenesis of certain forms of diabetes in Man.

*Presented at a meeting of the Clinical Diabetes Association of Rhode Island at The Miriam Hospital, Providence, R.I., April 2, 1968.

IN VITRO STUDIES

The use of *in vivo* studies can provide only a limited amount of information because of the numerous extrapancreatic factors involved in the control of insulin secretion. Thus, procedures have been developed in recent years for maintaining segments of the pancreas *in vitro* so that the direct effect of agents can be determined on the islets. In our laboratory, we had been searching for a long period of time for a means of obtaining intact islets from the mammalian pancreas, so that they could be maintained *in vitro* and insulin formation and release studied under control conditions. Approximately two years ago, we developed the simple procedure of injecting the pancreatic ductal system with a saline solution in order to disrupt the acinar tissue, followed by incubation of the pancreas with collagenase. At the end of the incubation period the mixture was diluted with a buffered salt solution and allowed to stand for 30 seconds. The intact islets would then settle to the bottom of a flask and the disrupted acinar tissue would remain in the supernatant fluid. The individual islets could then be transferred to incubation flasks for *in vitro* studies. As many as 200 or more islets could be obtained from a single pancreas, thus making it possible to obtain quantitative information from a single preparation. These studies indicated that the islets would be stimulated to secrete insulin by the addition of glucose and mannose, whereas galactose and fructose did not produce significant insulin stimulation. The addition of mannoheptulose with high concentrations of glucose inhibited the stimulatory action of glucose on the beta cells. Since mannoheptulose inhibits the phosphorylation of glucose, the inhibition of secretion by mannoheptulose indicates that phosphorylation of glucose is a necessary step in stimulating insulin secretion.

During recent years an intense interest has developed in the possible role of the adenylcyclase system in insulin secretion. Glucagon will stimulate insulin secretion *in vitro* presumably as a result of stimulation of the adenylcyclase system. The addition of theophylline, which inhibits phosphodiesterase, in conjunction with glucagon produced an even greater release of insulin from the isolated islets. The enzyme phosphodiesterase destroys cyclic AMP; therefore it was assumed that increased amounts of cyclic AMP were present in the islets, thus resulting in insulin secretion. In conjunction with Dr. Kipnis, quantitative measurements of cyclic AMP were accomplished on the islets under these conditions and indicated that this agent was increased in amount. Thus it appears that the stimulatory effect of glucagon on insulin secretion is mediated through cyclic AMP production. Unfortunately this does not provide the answer to the mechanism of action of the physiologic stimulus to insulin secretion, which is glucose. We do not as yet have quantitative information on whether cyclic AMP is increased in amount following the addition of glucose. Until this information is available, it is impossible to state whether the adenylcyclase system is involved in the normal secretion of insulin.

AUTORADIOGRAPHY

The use of the isolated islets has also made it possible to follow the fate of a radioactive labelled amino acid within the islets. Autoradiography accomplished with electron microscopy makes it feasible to identify the radioactive substance at different intervals following incubation *in vitro*. Preliminary studies using a labelled amino acid indicate that the Golgi complex is involved in the formation of beta granules. Further studies are in progress to verify this observation. If it is true, then it undoubtedly represents another step with associated controls in the formation of beta granules. This is in a sense unfortunate since it adds greater complexity to the problem.

In our laboratory, Doctor Simon Howell has developed a technique for isolating intact secretory granules from the isolated islets. Electron micrographs of the isolated granules indicate that they are surrounded by membranous sacs and appear as they were within the cytoplasm of the beta cell. This has provided an excellent opportunity to determine the direct effect of various agents on the isolated granules. Thus far, we have been unable to find any substance with the exception of deoxycholate which will cause the disruption of the granules. Tolbutamide had no effect on the granules, thus providing additional supportive evidence that this agent causes an active release of beta granules through secretion rather than simply by dissolving them within the cytoplasm of the cell. The membrane around the granules is apparently a protective coat which separates the insulin from the cytoplasm of the beta cell. From a physiological standpoint this would appear sensible, since it would segregate the insulin within the cell and make it available only at the time of release.

The above summary indicates some of the present knowledge concerning insulin formation, storage, and release in the beta cell. The tools and techniques are now available for pursuing these problems further, utilizing both an ultrastructural and biochemical approach. I believe that within the next few years more detailed information will become available as to the specific controls involved in each of these steps as well as the mechanism of action of glucose in turning on or stopping a particular phase in insulin secretion.

The morphologic studies and now more recently *in vitro* studies indicate that tolbutamide acts pre-

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dominantly on the release of insulin and does not stimulate formation of insulin in the beta cell. This is in contrast to the action of glucose which stimulates both formation and secretion. This difference is extremely interesting and is now being actively investigated in many laboratories in order to determine the differences and similarities of the action of these two agents on insulin release. Obviously this information is vital not only from a basic standpoint but also with respect to the cause of diabetes mellitus in Man, since tolbutamide will induce insulin release in certain patients, whereas glucose is incapable of stimulating sufficient insulin secretion to maintain normal blood sugar.

INSULIN SECRETION

Recurrent observations in the electron microscopic studies of insulin secretion are that the granules are apparently liberated at specific loci on the cell membrane and that several granules are apparently ejected at these same points. These observations have led us to the development of a workng hypothesis as to how this may occur. The membranous sac around the granule may be attached to the cell wall by a fibrous or tubular element similar to actomyosin. If two or three other sacs containing granules are attached to each other, a contraction of this fibrous element would result in fusion of the sacs with the cell wall and ejection of the granule extracellularly. This would necessitate the presence of an internal cytoskeleton within the cell and would provide an anatomical and biochemical basis to explain why the granules are liberated at certain points and how glucose could cause ejection of the granules from the cells. As a result of glucose metabolism and formation of ATP, this high-energy compound could thus act upon the contractile fibrils linking the sacs to the cell wall and result in the immediate release of insulin. Initial studies utilizing colchicine, which disrupts tubular systems within cells, indicates that this agent will inhibit insulin secretion. Further studies are in progress to determine if this working hypothesis is correct and whether it could serve as a basis of understanding the biochemical mechanism of action of glucose and of determining whether tolbutamide acts in a similar way.

CHANGES IN DIABETES MELLITUS

Let us turn now to some of the pathologic changes that are observed in the islets of patients with diabetes mellitus. It is established that in the classic case of juvenile diabetes there is an almost complete absence of islet cells in the pancreas. In the classic case of the maturity-onset diabetic islets containing secretory granules are present, and many times no pathological changes can be seen with light microscopy. One entity that is observed in the maturity-onset diabetic is hyalinization of the islets of Langerhans. As a result of electron microscopic and histochemical studies it is now apparent that this substance deposited within the islets is actually amyloid. The material is deposited between the basement membranes around the capillaries and thus separates the individual beta cells from the bloodstream. In those islets affected by amyloidosis quite obviously the beta cells would have an impaired rate of release of insulin into the bloodstream following stimulation with glucose. It is doubtful that this is the cause of diabetes mellitus in these patients, however, since the degree of amyloidosis is spotty and extremely variable in individual cases. The affected islet most certainly would have an impaired secretion rate of insulin following stimulation.

Another pathologic change observed in either juvenile diabetics or in the maturity-onset diabetic is so called hydropic degeneration of the islets. This is actually an accumulation of glycogen within beta cells which will disappear when the hyperglycemia is returned to normal following therapy. This entity is rarely seen at autopsy today since the patients are well controlled and do not have prolonged diabetic acidosis or severe hyperglycemia. Undoubtedly in the early stages of diabetes and before adequpate therapy is carried out, this change does occur in the beta cell and would result in impaired function. From experimental studies it would appear that this is not a change which will result in necrosis of the beta cells, but is simply a phenomenon of glycogen accumulation which disappears when the elevated blood sugar is returned to normal.

An increased thickening of the basement membrane around peripheral capillaries in the skin of the toes, for example, can be demonstrated in patients with overt diabetes mellitus. The question at the present time is whether this change in the basement membrane precedes the onset of diabetes mellitus or is a complication of the disease process. From studies in other laboratories there is suggestive evidence that the basement membrane thickening may actually precede the onset of chemical diabetes, since it has been demonstrated in so-called pre-diabetic individuals. Studies are in progress in several laboratories to evaluate this finding and also to clarify the pre-diabetic state. Regardless of whether the change precedes diabetes or is a complication of the disease it is an established phenomenon and undoubtedly occurs in many different organs. Definitive evidence has been accumulated to indicate that it occurs in the skin and skeletal muscle. Information is not available as to whether the change is present within the islets of the pancreas.

Another intriguing pathologic change within the pancreas of infants born of diabetic mothers is an infiltration of eosinophils and lymphocytes around

CLINICAL CLUES IN THE DIAGNOSIS OF THE SOMOGYI EFFECT* (REACTIVE HYPERGLYCEMIA)

JAMES B. FIELD, M.D., *of Pittsburgh, Pennsylvania. Professor of Medicine and Director of the Clinical Research Unit, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania.*

"Brittle" Insulin-Treated Diabetic Often Victim of Unrecognized Compensatory Hyperglycemia.

Fortunately, the blood glucose in the majority of diabetic patients can be controlled in a satisfactory fashion by the use of diet, oral agents, or insulin. There still remains, however, a small group of insulin-treated diabetic patients whose diabetes has been most difficult to regulate. Such patients have been labeled "brittle" diabetics. Although the cause of the brittleness is not always known, there can be little doubt that it may reflect the Somogyi effect.[1] The Somogyi effect can be defined as the reactive hyperglycemia which results from prior hypoglycemia. During this hyperglycemia period there is decreased insulin responsivity. Since the hypoglycemia is frequently asymptomatic, the physician prescribes more insulin based on the reactive hyperglycemia. The increased insulin dosage only tends to accentuate the hypoglycemia, and the reactive hyperglycemia is also exaggerated. In order to compensate for the hypoglycemia, certain endocrine and metabolic changes are initiated whose net effect is to combat the hypoglycemic effect of insulin. This includes inhibiting its action on peripheral tissue as well as liver and increasing hepatic glucose production. In the insulin-dependent diabetic who has no available endogenous insulin, these compensatory mechanisms overshoot with the resultant production of more hyperglycemia and glycosuria. Because of this overcompensation and the reappearance of hyperglycemia and glycosuria, the physician frequently concludes erroneously that the patient requires more insulin and increases the insulin dosage. The consequence of such increased insulin is another episode of hypoglycemia, frequently more severe than the previous one and followed by even greater compensatory efforts and higher blood glucose levels. The cycle is thus initiated and the patient is well on his way to becoming a "brittle" diabetic whose blood sugar is very difficult to control. During the compensatory hyperglycemia following the hypoglycemia, the diabetic usually manifests some degree of insulin hyporesponsiveness.[2] As a consequence of such resistance, larger amounts of insulin are required to control the hyperglycemia increasing the likelihood that once the temporary insulin hyporesponsiveness has abated, hypoglycemia will recur.

DIAGNOSIS OF SOMOGYI EFFECT

The diagnosis of the Somogyi effect may not be difficult to make if the patient has definite clinical episodes of hypoglycemia and the physician is aware of the Somogyi effect and its consequences. However, many patients whom we have seen with this phenomenon frequently have not had the usual clinical features of hypoglycemia, and thus the diagnosis of Somogyi effect has not been so apparent. In such patients, one must rely on other clinical clues or findings as indicative of the presence of the Somogyi effect. Frequently the hypoglycemic episodes occur during the night, and by the next morning the wave of reactive hyperglycemia has set in so that the first morning urine test contains 4 plus glycosuria. Because the reactive hyperglycemia is associated with some degree of insulin hyporesponsiveness, the insulin administered in the morning is inadequate, and the glycosuria may persist throughout the day. Such persistent glycosuria causes the physician to assume the patient has inadequate insulin. Sometimes the correct diagnosis of nocturnal hypoglycemia can be suspected by careful questioning of the patient for symptoms of hypoglycemia. The patient may complain only of nocturnal sweating, nightmares, or poor sleep as a manifestation of nocturnal hypoglycemia. Furthermore, early morning headaches associated with a 4 plus urine test should suggest the possibility of early morning hypoglycemia. We have also become impressed with the association of hypothermia with

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From the Clinical Research Unit and the Department of Medicine, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania.
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hypoglycemia[3] and have used this on more than one occasion as the initial clue that the patient was having nocturnal hypoglycemia. The morning temperature is usually the lowest one for the day, but when it is even lower than the patient's usual morning temperature, nocturnal hypoglycemia should be suspected. If any of these clues are present, or if one suspects that the patient's poor diabetic control reflects the Somogyi effect, more confirmatory evidence can be obtained by doing a urine reduction in the middle of the night at about 3 a.m. The patient should empty his bladder ½ to 1 hour before this test so it will be a more accurate reflection of the blood glucose at the time. If the urine contains no glucose or much less glucose than is present in the urine specimens tested during the day, one should obtain a blood sugar at the same time. The documentation of hypoglycemia in the middle of the night provides a firm basis for the diagnosis of the Somogyi effect. An example of this as well as illustration of most of the other clues suggesting the Somogyi effect is shown in Figure 1. It must be remembered that all of the physiologic components of hypoglycemia may be observed in the diabetic patient, even though the blood glucose level obtained is not in the hypoglycemic range.[4] A rapid fall in blood glucose in the diabetic, even though hypoglycemic levels are not reached, may cause the symptoms of hypoglycemia and initiate compensatory reactive hyperglycemia.

A pattern of urine reduction tests in which a series of negative tests is followed by a series of 4 plus tests should also alert the physician to the possibility of Somogyi effect (Figure 1). During the period of negative tests, hypoglycemia is probably present, and the series of 4 plus tests reflects the reactive hyperglycemia and insulin hyporesponsiveness during this period. The reactive hyperglycemia may last only for several hours, although occasionally it may persist for 2-3 days. When it has passed and insulin responsiveness has been restored, there is a return of negative urine tests, probably accompanied by hypoglycemia. Very frequently the physician misinterprets the period of glycosuria as indicative of inadequate insulin dosage, so that more insulin is administered, which serves only to accentuate the hypoglycemia and the subsequent reactive hyperglycemia.

Another clue which may be very helpful in the recognition of the Somogyi effect is the occurrence of wide swings in the blood glucose in a single day (Figure 1). If enough insulin has been given to lower the blood glucose to the normal range, it would seem unlikely that marked hyperglycemia a few hours later could reflect absence of insulin molecules. The cessation of the biologic action of insulin is gradual, and therefore it is reasonable that an amount of insulin which reduced the blood

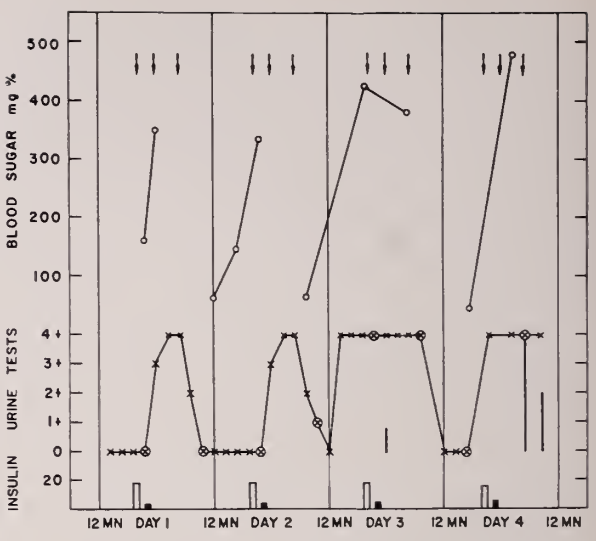


Fig. 1. Demonstration of several clinical clues for the diagnosis of the Somogyi effect. The patient's meals are designated by arrows at the top of the figure. The urine tests enclosed between those designated (x) each day represent those urine tests done between 7 a.m. and 9 p.m. The other urine tests would therefore deviate from the usual hospital routine. The vertical bars on the urine test scale on days 3 and 4 represent tests for acetone. The patient was receiving 20 units of NPH and 4 units of regular insulin each day. This patient showed nocturnal hypoglycemia, wide swings in the blood glucose over a short period of time, and 4 plus glycosuria alternating with periods of aglycosuria. The latter were usually at night when routine urine tests would not be done.

glucose to normal should have some residual effect over the ensuing hours. Even though the action of the insulin is diminishing, the blood glucose should not rise to levels of 400-500 mg. per cent over a few hours. If insulin therapy is stopped in a well-controlled diabetic patient, the blood glucose gradually rises over the next 12-24 hours to the range of 250-350 mg. per cent.[5] Hence a much more rational explanation for the rapid rise in blood glucose from 60-450 mg. per cent over a few hours is the reactive hyperglycemia which is compensating for preceding hypoglycemia — the Somogyi effect.

The appearance of acetonuria, usually with, but sometimes without glycosuria soon after there has been a negative test for both glucose and acetone, should also suggest the possibility of the Somogyi effect (Figure 2). As mentioned before, if there has been enough available insulin to normalize the blood glucose and prevent glycosuria, it seems reasonable that over the next few hours there should be sufficient insulin to prevent the development of diabetic ketonuria. A more rational explanation would seem to be that during the period of hypoglycemia there was inadequate available carbohydrate for cellular utilization. This would result in

increased utilization of fatty acids and excess production of ketone bodies. In some respects, the situation is similar to that seen in diabetic acidosis, where fat utilization is accentuated because of insufficient intracellular glucose utilization. However, the one important difference is that in diabetic acidosis there is extracellular hyperglycemia and inadequate insulin, while in the Somogyi effect there is hypoglycemia because of excessive insulin. If the diagnosis is suspected on any of the above clues, the demonstration of hypoglycemia is most important in establishing the diagnosis of the Somogyi effect in such patients. The likelihood of documenting hypoglycemia is greatly increased by obtaining blood glucose determinations when the urine tests are negative. This may often entail obtaining blood at rather unusual times during the day or night. A standing order to obtain a fasting blood glucose value each morning before breakfast will often prove useless, while an order to obtain a blood glucose determination whenever the urine test is negative for glucose is much more likely to document hypoglycemia.

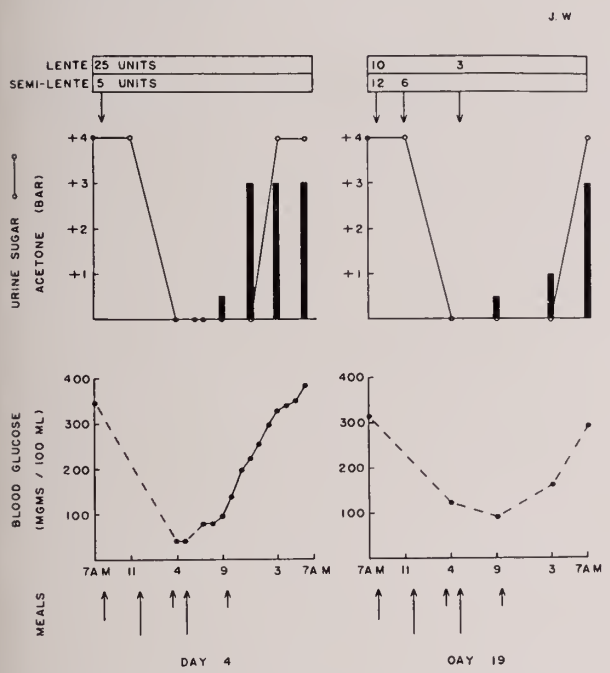


Fig. 2. Demonstration of acetonuria, sometimes preceding glycosuria but following hypoglycemia, as a clue to the Somogyi effect. This patient also demonstrated wide fluctuations in blood glucose and urine glucose determinations.

TREATMENT

Although the presence of any of these clinical clues and the demonstration of hypoglycemia provide strong support for the diagnosis of the Somogyi effect, definitive proof the diagnosis depends upon the response of the patient to judicious reduction of insulin dosage. If the etiology of the "brittle" diabetes is excessive insulin therapy, then the treatment is to reduce the insulin dosage, which should be accompanied by better diabetic control and decreasing glycosuria. Obviously, if the diagnosis of the Somogyi effect is incorrect, such reduction in insulin dosage will cause deterioration of the diabetic control and increasing glycosuria and hyperglycemia. Although this may be assessed by qualitative urine tests, quantitative 24 hour urine glucose determinations will provide a much more reliable guide. Several points should be emphasized in relation to the institution of therapy for the Somogyi effect. Although it is desirable to hospitalize the patient so that the diagnosis can be established and treatment consisting of reduction of insulin dosage instituted, this is not absolutely essential. If the patient is not hospitalized, it is imperative that he be very cooperative and that he be in frequent, perhaps even daily communication with the physician. The reduction in insulin dosage must be done gradually and, just as important, by small increments. If the reduction in insulin dosage is too precipitous, the patient may suffer from worsening of his diabetes, which may even reach the extent of diabetic acidosis. Such a course of events would encourage the physician to conclude that the patient's poor diabetic control reflected inadequate insulin rather than the true diagnosis of the Somogyi effect. The explanation for the development of worsened diabetic control when insulin is reduced too fast or by too large increments probably depends upon the persistence of the physiologic concomitants of the period of reactive hyperglycemia. During the period of the Somogyi effect, there is almost certainly activation of several hormonal systems, which tend to raise the blood sugar and combat the hypoglycemia due to the excessive insulin. These compensatory mechanisms do not cease immediately when the insulin dosage is reduced, so that, if the reduction is too rapid, the relative excess of the compensatory factors leads to worsening of the diabetes. Therefore, the insulin dosage probably should not be reduced more frequently than twice a week, and the reduction should probably be no more than 10 per cent of the total dose. Because such therapy requires time to achieve better diabetic control, it is not economically feasible to keep the patient in the hospital for this period of time. However, if the initial institution of insulin reduction is associated with less glycosuria and less brittleness, then the physician can be reassured that the diagnosis of the Somogyi effect is correct, and the patient can be discharged for further reduction of the insulin dosage as an outpatient. Because there is much variability in the glycosuria during the period of the Somogyi effect, single 24 hour urine glucose determinations may give quite misleading results.

(Continued on next page)

Therefore the average glucose excretion over a 4-5 day period is much more meaningful. Many physicians are too anxious to solve the problem of the "brittle" diabetic in one week, but only succeed in accentuating the problem. Some of Somogyi's original patients were treated for more than two years before excellent diabetic control was achieved.[1,2] Such patience and perserverance can be rewarded by the transformation of an unhappy diabetic patient with poor control into a patient whose diabetic control presents no therapeutic problems.

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STRUCTURE AND FUNCTIONS OF THE ISLETS OF LANGERHANS

(Concluded from Page 502)

the islets. In these individuals the islets are hyperplastic, and the leukocytic infiltration occurs in about 25 per cent of children born of diabetic mothers and expiring within the first week after birth. Experimentally an anatomical counterpart of this lesion can be produced by the administration of anti-insulin serum to rats. It is not known whether an antigen-antibody reaction is the cause of the eosinophile and lymphocytic infiltration in the pancreas of these children. It is a provocative experimental observation that hopefully will stimulate further studies on children born of diabetic mothers during this initial few days of life.

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MEDICAL BUREAU

of the

Providence Medical Association

Editorials

DIABETES — THEN AND NOW

Featured in this issue is a symposium on diabetes mellitus. It is comprised of three papers, one a review of the knowledge available in 1854, and the other two, read at a recent meeting of the Clinical Diabetes Association of Rhode Island, on some of the most up-to-date concepts, including facts revealed by the electron microscope.

The essay by Sylvanus Clapp is interesting, because it reveals, despite a number of foggy notions, some of the earliest definitive discoveries concerning carbohydrate metabolism. He mentions, for example, that Thomas Willis of England had been the first, in 1679, to taste the urine of diabetics. In a paper titled "Of the Too Much Evacuation of Urine, and Its Remedy, and Especially of the Diabetes or Pissing Evil, Etc.," Willis described the urine as being "wonderfully sweet like Sugar or hony [sic]." It was not until 1889 that Minkowski and his co-worker von Mering, attempting to determine whether the dog could survive total pancreatectomy, discovered that without exception severe diabetes appeared within 24 hours after the operation, with urine showing a sugar content of as high as five per cent. He attributed this effect to loss of an internal secretion. Opie in 1900 first associated a pancreatic disorder with clinical diabetes by demonstrating hyaline degeneration of the islands of Langerhans in cases of diabetes. The great event, of course, was the discovery of insulin in 1922 by Frederick G. Banting and C. H. Best at the University of Toronto. Banting had been trained as an orthopedic surgeon, and Best was a second year medical student. J. B. Collip very soon prepared an insulin suitable for clinical use.

Prior to Minkowski's key discovery, the pancreas had not been suspect. Claude Bernard, the great French physiologist, had as early as 1848-50 demonstrated that the dog liver had the capability of producing and discharging sugar through the hepatic veins whether the animals had been fed carbohydrates or exclusively protein substances. He also demonstrated in 1851-52 that puncture of the floor of the fourth ventricle in dogs produced temporary diabetes mellitus. These discoveries are mentioned by Clapp. Bernard also isolated glycogen in the liver, although this was not published until 1855, after the delivery of Sylvanus Clapp's paper. While Bernard believed that diabetes mellitus was probably due to an overproduction of glucose by the liver, Bence Jones shrewdly suspected that the defect was in the metabolic breakdown of glucose: "The changes which occur in health may be represented by the following series: starch, dextrine, sugar, vegetable acid, carbonic acid," while in diabetes "The series of changes is stopped at sugar." Clapp took this into consideration, despite the great prestige of Bernard, when he stated "that this saccharine material is a true physiological product, and only connected with a morbid condition, when produced in excessive quantity, *or not normally disintegrated.*"

Recent studies of insulin by immunoassay techniques are revealing unsuspected complexities. Proinsulin, a newly described single chain peptide precursor of pancreatic insulin, and "Big Insulin" (Molecular weight 9000) and "Little Insulin" (Molecular weight 5000-6000), more recently described in plasma by Jesse Roth and co-workers at the NHI, are of uncertain significance at this time.

And so we progress from the primitive observations of the Pissing Evil to the complexities of nuclear medicine.

THE BUTLER HOSPITAL LECTURES

Recently a series of psychiatrically oriented lectures was presented at Butler Hospital. These outstanding lectures were given by well-known authorities in the field. The speakers and their subjects were as follows: Virginia M. Satir, "Workshop and Family Therapy"; Douglas D. Bond, M.D., "Psychiatry in Medical Education"; Walter E. Barton, M.D., Medical Director of the AMA, "Impressions of Soviet Psychiatry"; Rollo May, Ph.D., outstanding psychologist from New York, "Psychotherapy and the Daemonic"; and Dana L. Farnsworth, M.D., from Harvard University, "Disturbing Behavior in a Changing Society." The lectures were well attended and well received. It was indeed a generous public service on the part of Butler Hospital of ran interested segment of our psychiatric community.

(Continued on next page)

For such outstanding lectures the Administration of Butler Hospital is to be congratulated. It is to be hoped that more such timely subjects will be discussed by prominent authorities in their fields in the near future.

The final lecture by Doctor Farnsworth was particularly timely in that it stressed the disturbing behavior in adolescence of grave concern to all. He gave some wise and concise advice for the adult, parent, or others who may work with young people. His ten points to follow in dealing with the young person are worth repeating here:

Listen to him
Examine his point of view
Speak with him, not to him
Be consistent yourself
Trust him even though he may not deserve it
Exhibit standards of taste but do not demand it of him
Maintain firm discipline
Avoid making standards you are not able to enforce
Do not be too upset by a young person's condemnation of us as adults

THYROCALCITONIN BREAKTHROUGH

In 1961 Harold Copp of British Columbia first demonstrated the existence of a calcium-lowering substance in the blood of animals. Paul Munson and his group at the University of North Carolina in 1963 identified the thyroid gland as the source of the new hormone. In the ensuing five years progress has been rapid.

Armour Pharmaceutical Company recently accomplished the preparation of adequate quantities of a partially purified extract of pig thyroid. Using this material as a base John T. Potts, Jr. and his co-workers at the National Heart Institute (Laboratory of Molecular Diseases, Section on Polypeptide Hormones) increased the potency of the thyrocalcitonin active principle 50,000 times. The thyroids of 30,000 hogs produced 30 mg. of pure substance! This product passed stringent tests of purity.

These studies led to the isolation at NHI of the pure hormone and a demonstration of its protein nature. It proved to be a polypeptide consisting of 32 amino acids. Subsequently the arrangement of these 32 components in a single chain was laboriously worked out. The NHI workers have also provided a method of measuring by radioimmunoassay the normally minute amounts of hormone in the circulating blood and have established through the assay method the physiological importance of the hormone in bone and mineral metabolism.

Using this work as a foundation several pharmaceutical houses entered the race for synthesis, including Ciba A. G. and Sandoz, Ltd. of Basel, Switzerland, and Lederle Laboratories of the U.S.A. The race was won apparently by S. Guttman and co-worker of Sandoz, who announced the successful synthesis during May. G. W. Anderson and P. H. Bell of Lederle and the Ciba group were also upon the verge of success, the latter group subsequently announcing a similar accomplishment.

Knowledge of the structure and synthesis of the hormone opens the way to synthesis of altered forms of the molecule, which may have enhanced biological activity. A modified corticotrophin, six times more active than the naturally-occurring hormone, was recently prepared by the same Guttman. Potts and his group have already identified one site in the thyrocalcitonin molecule, an animo acid whose alteration does not affect the hormonal activity, which could conceivably be used for this structural modification.

F. C. Bartter of NHI has already used the Armour concentrate in a patient with disseminated parathyroid cancer and widespread bone destruction to maintain the blood calcium at normal levels for five months with striking healing of the bone lesions.

This work represents another milestone in this Golden Age of medical progress and stands as a shining example of the valuable contributions made possible through the cooperation and interplay among the commercial pharmaceutical industry, non-profit medical institutions, and government sponsored medical research.

"MY POLITICAL CREED"

Inserted in this issue of the JOURNAL is a colorful page titled "My Political Creed" which has been prepared by the American Medical Political Action Committee. We call it to the attention of every member of the Society, for it re-asserts what every physician knows and believes, but unfortunately does not always practice as regards involvement in political actions.

Doctor Milford O. Rouse, as President of the American Medical Association, recalled to us at the time of our Annual Meeting in May that Rhode Island physicians have compiled a brilliant history and that they were in the forefront in progressive and effective health legislation efforts through the years.

Today's membership has the responsibility to

continue that leadership which calls for active involvement in, and knowledge of, the political issues of the day, both local and national.

AMPAC and its Rhode Island chapter of RIMPAC are nonpartisan organizations. They seek to place in public office representative men and women of intelligence and courage to maintain the freedoms that have made this country great. Medical practice is under tremendous surveillance and pressure currently. Changes for the improvement of health care are imminent, but such changes must not occur for reasons of political expedience or advantage.

Only by active, constant alertness in political actions can physicians protect the public in these vital matters.

PREVENTION OF WILSON'S DISEASE

Five individuals among every practitioner's patients carry the gene of Wilson's disease. The cirrhosis of the liver, dysarthria, tremors, and severe neurological disorders which constitute the syndrome are preventable with D-penicillamine. Waiting for the full-blown clinical picture or demonstration of the Kayser-Fleischer rings in the cornea is as primitive as waiting for signs of a lung cavity on physical examination to detect tuberculosis. The diagnosis is made by ceruloplasmin determinations. A serum concentration of less than 20 milligrams per 100 milliliters or a urinary copper excretion of more than 100 micrograms per 24 hours is significant. Either finding should suggest a liver biopsy. A concentration of over 100 micrograms of copper in the liver will be found if the disease is present.

The difference in incidence of Wilson's disease in the heterozygous state, which occurs in everyone's practice, and the full-blown disease is accountable to the fact that the full-blown picture is seen only in the homozygous state and that occurs only once in every two hundred thousand individuals. In the heterozygous state, which has a gene frequency of one in every two hundred persons, about ten per cent will show biochemical changes in the ceruplasmin, the copper-bearing blood protein. Thus we have a rare disease in the general population, which, however, manifests itself to some degree in everyone's practice. If we are properly concerned with preventive care — the payoff in preventing Wilson's disease is considerable — what is the clinician's obligation to his patient group? Back to fundamentals! An adequate family history is the sine qua non: specific mention of Wilson's disease; neurological disease (non-specific); or nonalcoholic cirrhosis. A positive family history of any one of these entities should call promptly for a ceruloplasmin determination. This can be carried out in any well-equipped clinical laboratory.

A diagnosis of potential Wilson's disease in an asymptomatic patient is more than a sop to the personal pride of the examiner; it earns a tremendous reward for the potential sufferer. Sternlieb and Scheinberg have shown in a recent excellent paper that D-penicillamine has been extremely effective, not only in preventing morbidity, but also in correcting the biochemical defect in patients already suffering from the disease. Symptoms can be reversed.

Doctors must also in a sense be collectors of rare items, much as is the collector of coins, books, or art objects. It is only by diligently looking for the rare diseases that he will find and recognize them. The intellectual reward and social value of collecting such rare specimens makes it a worthwhile hobby. Be alert and you too may spot a case of Wilson's disease.

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PSITTACOSIS A "VIRUS" NO LONGER

About 40 years ago Bedson of London isolated the causative agent of psittacosis. He and his group subsequently showed that the microorganism belonged to a unique group now known to cause not only psittacosis, but also lymphogranuloma venereum and trachoma, and possibly other diseases of man and animals as well. It was long believed that the psittacosis agent was a virus. It is now classified as a bacterium. The electron microscope and cell culture have been the important agents in the differentiation. The group has been given the generic name *Chlamydia*.

The chlamydiae are obligate intracellular parasites, meaning that they grow and multiply only inside other living cells. Therefore they can be cultured only through cell culture techniques.

The chlamydiae depend on their host cells for many low molecular weight intermediates, but they make their macromolecules of DNA, RNA, and protein entirely on their own. Unlike other bacteria they are unable to do this outside living cells. Unlike viruses, which are complexes of DNA or RNA, they are complete organisms; they are simply bacteria that have evolved for living in a special environment. Like bacteria they reproduce by fission of the parental cell.

The effect of antibiotics on psittacosis, trachoma (Chlamydia trachomatis), and other chlamydial diseases is now explainable in terms of their effect on biosynthetic actions. These newly revealed concepts explain many of the pecular and formerly obscure properties of this important group of organisms.

AN IDEA WHOSE TIME HAS COME

At a meeting of the House of Delegates of the Rhode Island Medical Society on November 4, 1963 the following resolution was adopted for submission at the December 1963 Meeting of the AMA in Portland, Oregon:

Whereas the Rhode Island Medical Society believes that any qualified physician should be eligible for membership in the American Medical Association, or any constituent association or component society thereof, regardless of race, religion or place of national origin; and

Whereas any such discrimination violates the spirit of the provisions of ARTICLE II of the Constitution of the American Medical Association;

Now, Therefore, be it

Resolved: That the House of Delegates of the American Medical Association at its meeting held in Portland, Oregon, in December, 1963, be urged to adopt the following resolution:

"That the Board of Trustees of the American Medical Association be, and thereby is, instructed to take such action as it deems necessary or appropriate to deny the rights and privileges of membership in the American Medical Association to members of any constituent association or component society thereof which denies membership to any qualified physician because of race, religion or place of national origin."

It was duly presented, received with towering indifference, and proptly lost in the parliamentary labyrinth.

At the recent AMA meeting in San Francisco the following resolution was introduced by our neighbor, Massachusetts:

Whereas, Regular membership in the American Medical Association is limited to "those members of a state association who hold the degree of Doctor of Medicine or Bachelor of Medicine and who are entitled to exercise the right of membership in their state association, including the right to vote and hold office, as determined by their state association;" and

Whereas, This limitation makes it possible for a constituent or state association to deny for reasons of color, creed, race, religion or ethnic origin the privileges of membership in the American Medical Association to otherwise qualified persons; and

Whereas, Such denial is inconsistent with the ideals of the American Medical Association and contrary to a long-established policy of the Association; and

Whereas, The American Medical Association cannot in good conscience continue to allow a condition to exist that makes it possible for a constituent association to circumvent or thwart its policies in regard to eligibility for membership;

Therefore, Be it

Resolved, That the Bylaws of the American Medical Association be amended to state clearly that membership in the American Medical Association or any of its constituent associations shall not be denied or abridged on account of color, creed, race, religion or ethnic origin; and be it further

Resolved, That the Bylaws of the American Medical Association be amended to provide that in addition to receiving "... appeals filed by applicants who allege that they, because of color, creed, race, religion or ethnic origin, have been unfairly denied membership in a component and or constituent association ...," determining facts and reporting its findings to the House of Delegates, the Judicial Council shall, if it determines the allegations are indeed true, admonish, censure or, in the event of repeated violations, recommend to the House of Delegates that the state association involved be declared to be no longer a constituent association of the American Medical Association; and be it further

Resolved, That the Council on Constitution and Bylaws be directed to prepare amendments consistent with the above provisions for consideration by the House of Delegates in Miami, December 1-4, 1968.

It was passed by the House of Delegates of the AMA with much fanfare. Amen.

DERMAQUIZ ANSWER

(See Page 480)

At left a typical case of Kaposi's sarcoma. A Unilateral leg swelling is often an early sign of the disease. Going on for 20 years with little discomfort and, evidently, without involvement of vital organs, demonstrates the benignity of Kaposi's sarcoma. At Right a palm with a spot of Kaposi's sarcoma the same as on the patient's left leg.

GUN CONTROL

Shotguns worth $1,500 were taken from a car parked at Roger Williams General Hospital about 7:30 last night, it was reported.

William J. Ayles, 51, of 949 Greenville Ave., Smithfield, told police he was visiting a friend at the hospital when he looked out the window and noticed two men prying open the trunk of his car.

The men took five 12-gauge shotguns, some tools and two boxes of shells before driving off in a red van, police said. The trunk of the car had been locked.

. . . Providence Evening Bulletin,
June 25, 1968



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by weekdays...not "cycle days"

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Note: Ovulen remains available in the familiar round Compack for those women who may wish to continue to use the traditional 20-day schedule. Be sure to specify Ovulen-21 to assure each new patient of the advantages of the new *Three Weeks On—One Week Off* schedule. She might appreciate your budget-minded authorization for a six-month supply (five Refills).

Indication — For oral contraception.

Contraindications — Thrombophlebitis or a history of thrombophlebitis or pulmonary embolism, liver dysfunction or disease, known or suspected carcinoma of the breasts or genital organs and undiagnosed vaginal bleeding.

Warnings — Discontinue medication pending examination if sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine occurs. Discontinue if papilledema or retinal vascular lesions occur. Since the safety of Ovulen in pregnancy has not been established, rule out pregnancy before a patient who has missed two consecutive menstrual periods continues the tablets. Consider the possibility of pregnancy at the first missed withdrawal flow if the recommended schedule has not been followed. The active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this to the infant has not been determined.

Precautions — The pretreatment physical examination should specifically include the breasts, pelvic organs and a Papanicolaou smear. Endocrine and possibly liver function tests may be affected by Ovulen. Such tests should be repeated two months after stopping the medication if their results were abnormal in a woman taking Ovulen. Pre-existing fibroids may enlarge under the influence of progestin-estrogen preparations. Patients with epilepsy, migraine, asthma, cardiac or renal dysfunction, which conditions might be influenced, require careful observation because Ovulen may cause some degree of fluid retention.

Ovulen should be used with caution in patients with a history of cerebrovascular accident. Nonfunctional causes should be considered if breakthrough bleeding occurs. Adequate diagnostic measures are indicated in women with undiagnosed vaginal bleeding. Carefully observe patients with a history of psychic depression and discontinue the medication if depression recurs to a serious degree. Any possible influence of prolonged Ovulen use on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. Carefully observe diabetic patients during Ovulen use since a decrease in glucose tolerance has occurred in a few such patients. Physicians should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism since such conditions occasionally occur in patients taking oral contraceptives. Use Ovulen judiciously in young patients in whom bone growth is not complete because of the effects of estrogens on epiphyseal closure. Age is no absolute limiting factor, although Ovulen use may mask the onset of the climacteric. Pathologists should be informed of Ovulen use when relevant specimens are submitted.

Side effects — The following adverse reactions have been observed in varying incidence in patients taking oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight (increase or decrease), changes in cervical erosions and secretions, suppression of lactation when used immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals and mental depression.

Although the following side effects have been reported in users of oral contraceptives no cause and effect relationship has been established: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption and itching. Thrombophlebitis, pulmonary embolism and neuro-ocular lesions have occurred in users of oral contraceptives, although a cause and effect relationship has been neither established nor disproved.

The following laboratory results may be altered by oral contraceptives: Bromsulphalein® and other hepatic function tests—increased; coagulation tests, including prothrombin, Factors VII, VIII, IX and X — increased; thyroid function — increase in protein-bound iodine and butanol extractable protein-bound iodine, and a decrease in T^3 values; metyrapone test and pregnanediol determinations.

Dosage and administration — One tablet of Ovulen-21 daily for 21 consecutive days, beginning five days after the onset of a menstrual flow (the first day of menstruation is counted as day 1), then discontinued for one week. If Ovulen is started later than day 5 after menses begins another method of protection is used until the first seven tablets have been taken. Subsequent 21-day courses are begun on the eighth day after the last tablet was taken in the preceding cycle. This three weeks on — one week off schedule is continued whether or not withdrawal flow has begun, flow has ceased or spotting or breakthrough bleeding has been experienced.

If one tablet is missed it is to be taken as soon as it is remembered and the next tablet at the usual time. If two consecutive tablets are missed the dosage is doubled for the next two days, then the regular schedule is resumed. If three consecutive tablets are missed a new tablet cycle is started on the eighth day after the last tablet was taken. For the best protection in the latter two instances instruct the patient to use another method of contraception until the next seven consecutive tablets have been taken. The possibility of ovulation increases with each successive tablet missed.

Postpartum administration — Non-nursing mothers may begin Ovulen immediately after delivery and nursing mothers after lactation is well established.

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three weeks on...one week off

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effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. Th following is a brief precautionary statement.

Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reactic (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within th recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in female than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticaria type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significan disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

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Health and Welfare Legislation Enacted by the Rhode Island General Assembly — January Session, 1968

LEGISLATION ENACTED

Mental Health

Problems of mental health continued to command attention from the Rhode Island General Assembly as it completed its 1968 session in June. The increasing number of bills each year relating to mental health indicates anew the point made by the Society's Committee on Mental Health that a state commissioner should head a Department of Mental Health Services under the State Health Director.

Resolutions were passed that reinstated the commission studying the entire field of drug addiction, and called for a report by April 15, 1969.

The chapter on mental health laws was amended by deleting sections granting powers of investigation to the Social Welfare Department possessed by the Health Department; by limiting the facilities the Health Department can investigate to those licensed by the Director; by not permitting any person under the influence of alcohol to be admitted to a mental health facility unless he is mentally ill as defined by the mental health law; by doing away with the requirement that within five days of admission the patient's record must be forwarded to the Director of Health; by permitting local welfare director to apply for certificates of admission; by permitting the examining physician to confirm the need for immediate care; and by permitting the person in charge of a facility to petition for the transfer of a patient.

* * *

An amendment was enacted that requires cities and towns to pay transportation and incidental costs of mentally retarded children attending the various state approved centers for mentally retarded children.

* * *

The statute enacted in 1967 entitled "Office of Mental Retardation" was amended in its entirety to correct specified errors in that legislation and to reaffirm and expand the intent of the Assembly for the development of a complete, comprehensive, and integrated program of specialized services for the metally retarded individuals in the State. The Director of Health is to appoint an assistant director of health for mental retardation whose position shall be in the classified service of the State.

* * *

The uniform narcotic drug act was amended to exempt the dispensing or selling up to 30.1 milligrams of opium in medicines sold in good faith as a medicine, and only to a person who will sign his name in a record book of such purchases. (Present law exempts 1/6 grain of dihydrocodeinone or its salts and makes no provision for signing a record book.)

* * *

An amendment changes the number of appointments to the Advisory Council to the Administrator of the Division of Alcoholism from 15 to 17, with one of the new members to be a representative of the R.I. Society of Osteopathic Physicians and Surgeons.

WORKMEN'S COMPENSATION

Many bills were introduced relative to changes in the workmen's compensation statutes, and more than a usual number were passed by the Assembly. Important ones included the following:

Ionizing Radiation

An additional benefit listed as a compensable occupational disease was a disability arising from any cause connected with or arising from ionizing radiation.

* * *

Maximum Medical Service Charges

The maximum medical service charges allowable for treatment of an injured employee were increased, as follows:

(A) for an employee not receiving hospitalization or receiving hospitalization for not more than 14 days, from the present $600 to $900

(B) for an employee receiving hospitalization for more than 14 days, from the present $1,200 to $1,500

(C) employees receiving diathermy and massage treatments, from the present $125 to $175.

* * *

Death Benefits

Death benefits were increased from the present 60 per cent to 66 2/3 per cent of the deceased employee's weekly wage, and the maximum was raised from $30 to $65 per week, and the minimum from $26 to $35 per week. Increases will prevail for dependent children of such deceased employee

(Continued on next page)

except that the allowance for each child would be increased from $4 to $5 per week.

* * *

Transportation Costs

An employer is now required to pay transportation costs of an employee not only to the office of an impartial examiner appointed by the Workmen's Compensation Commission, but to the office of any examiner requested by the employer.

* * *

Director May Declare Employer Liable for Appliances Cost

The existing law provided that the Director of Labor may enter an order declaring an employer liable for medical services and medicines of an employee who is injured but who either is not incapacitated, or whose incapacity is less than three days. An amendment passed this year empowers the Director to declare the employer liable for orthopedic or other medically prescribed appliances, and ambulance service as well.

* * *

Partial Disability Benefits

The section relating to partial incapacity was amended to provide that if a partially incapacitated employee has made a bona fide attempt to find suitable work without success, and the employer is unable to furnish suitable work, then he can receive all benefits available to a person who is totally disabled including the additional $5 per week if his temporary disablity insurance has expired or if he is not entitled to TDI, and such benefits can be received for the same number of weeks as though he were totally disabled.

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DIVISION OF MEDICAL EXAMINERS

The chapter entitled "Medical Examiners" was amended in its entirety as the result of action taken by the Society. A preliminary legislative proposal from the Attorney General's department was doomed not to pass, and the Society therefore drafted a new bill which incorporated needed reforms and improvements in the medical examiner system for Rhode Island.

The new act creates a central state medical examination system supervised by a qualified pathologist serving in the department of the Attorney General, with expanded powers, and having available the advice of an advisory committee made up in part of state officials and in part of interested professionals and citizens of the State. The President of the R.I. Medical Society and the President of the R.I. Society of Pathologists, or their designees, form the professionals, and the Governor is to name two citizens-at-large to serve. The bill spells out the duties of the chief medical examiner, his deputy, and his assistants, all of whom will have statewide jurisdiction.

The act goes into effect January 2, 1969.

ORGAN TRANSPLANTS

The General Assembly voted to name seven of its members, four from the House to be named by the Speaker, and three from the Senate to be named by the Majority Leader. Five of the appointees must be from the majority political party.

The commission, an unpaid one, has as its purpose the "study of the entire field of the transplanting of vital human organs."

It is to report its findings by April 4, 1969.

SCHOOL IMMUNIZATION REQUIREMENTS

The previous statute calling only for a smallpox immunization prior to attendance at any public or private school was amended by the elimination of the one named disease, and the substitution of the provision that the person attending the school shall furnish a certificate of a licensed physician that such person has been "immunized against such diseases as may from time to time be prescribed by regulation of the Director of Health and the Commissioner of Education," or a certificate that the person is not a fit subject for immunization for medical reasons, or a certificate that such immunization is contrary to the person's beliefs.

HOSPITAL LEGISLATION

Negligence Liability

Every hospital operating within the State, whether sustained in whole or in part by charitable contributions or endowments, shall henceforth be liable for the neglect, carelessness or want of skill, or for malicious act of any of its officers, agents, or employees in the management of or for the care or treatment of any of the patients or inmates of such hospital in the same manner as any other person or corporation would be liable at common law for similar acts on the part of his or its officers, agents, or employees.

* * *

Licensing of Hospitals

The chapter relating to hospital licensure was amended:

1) by providing for prior state approval of certain capital changes in hospital plant and equipment,
2) by requiring a system of uniform reporting by hospitals of financial and statistical data, and
3) by establishing a new health services council of 19 members, 12 of whom shall be members of the General Assembly, and the remaining 7 appointees of the Governor.

* * *

Financial Aid for Hospital Additions

The Rhode Island Educational Building Corporation Act was amended to permit it to finance, through the issuance of tax exempt revenue bonds, additions to hospitals and other health care facilities throughout the State. The agency is a self-supporting one but was previously restricted to the issuance of bonds to finance improvements at the colleges and universities in the State.

* * *

Hospital Room Rates

The commission named to study and report on hospital room rates, and the possible supervision of hospital costs by the State, was given another year to continue its studies.

BASIC SCIENCE LAW AND CHIROPRACTIC

The basic science law was amended to require two years college study by the applicant to take the basic science examination administered by the Division of Professional Regulation, instead of one year's study as is presently required. The two-year program must be in an accredited academic college.

* * *

The general laws entitled "Accident and Sickness Insurance Policies" was amended to prohibit unfair discrimination against any person because of race, color, or creed when seeking reimbursement under any accident or sickness insurance policy or service contract, and also prohibits unfair discrimination against particular individuals or against chiropractors, osteopaths, and physicians and surgeons.

The legislation was vetoed by the Governor, but the veto was subsequently overridden by the Assembly.

EXTENDED CARE FACILITIES

A bill was enacted that creates a commission to be known as the Extended Care Facilities Commission to administer a state bond issue from which loans would be made to nonprofit private hospitals for the construction of extended care facilities. A referendum is provided for a 20-million dollar bond issue for this purpose.

LEGISLATION RELATIVE TO CARE OF BLIND

A bill was passed that requires any state, city, or town agency administering benefits to the blind or nearly blind to report the names of such people to the Registry of Motor Vehicles, which in turn shall refer the matter to the Medical Advisory Board for an opinion as to the ability of the licensee to drive safely on the highways. The reports shall be confidential.

* * *

An appropriation of $2,000 was made to assist the Rhode Island Sight Foundation in the operation and maintenance of its sightmobile.

EMERGENCY MEDICAL SERVICE

An amendment to the general laws was enacted that requires that an office of local or state police be notified of an accident, in addition to giving notice to the office having jurisdiction, to dispatch emergency medical service to the scene of the accident. A police or fire department responding to an emergency call would be required to continue to the locale of the accident though it is outside the jurisdiction of the department, and to render emergency service as reasonably necessary.

GROUP HEALTH ASSOCIATION

As previously reported (see R.I.M.S. NEWSLETTER, February 1968), a Group Health Association was established under a special action which permits the Rhode Island AFL-CIO to create a prepaid health program. One amendment to the act as previously reported was made from the floor of the House whereby provision was made for public inspection of the Group Health Association's annual statement of its condition to be filed with the Secretary of State. Other minor changes made dealt with some rewriting of the corporation's filing procedures, triennial instead of annual examinations of the books by the State, and the addition of two men to the list of incorporators to make the total 32.

HEALTH AND WELFARE FUNDS

Of special interest in view of the act creating a Group Health Association under labor auspices was

(Continued on next page)

the passage of an amendment to the general laws entitled "Health and Welfare Funds, Pension Plans," whereby any employer entering into a collective bargaining agreement with a labor organization or association of employees providing for payments to a health and welfare fund or pension fund, or other such plan for the benefit of the employees, must make the payments required by the terms of such agreement under penalty of a fine. (It is reported that the situation has existed where some employers deduct the agreed upon contribution from the workers' wages and for one reason or another do not turn the deductions over to the fund involved.)

MILK SANITATION CODE

The Rhode Island Milk Sanitation Code was subject to a series of amendments that allow for the adoption of definitions, grades, and standards by regulation. The procedure for adopting regulations is well-defined. The city or town health agency representation on the milk sanitation board was deleted to conform to the absorption by the State Department of Health.

ADDITIONAL HEALTH DEPARTMENT ISSUES

Refuse Disposal

An act providing for the establishment of standards and regulation of refuse disposal was passed which gives specific authority to the Director of Health to make rules and regulations, and also provides for a state grant to the local communities to induce them to engage in the design, construction, maintenance, and operation of refuse disposal facilities meeting the Department's regulations. The bill provides for an appropriation of $350,000.

* * *

Rodent Control

A new chapter was added to the general laws entitled "Health and Safety" which is listed "Rodent Control and Eradication." The act authorizes the Health Director to promulgate statewide minimum standards for rodent control; to advise and assist local communities in preparing applications for federal financial assistance; to make agreements with communities for state financing; to make available technical and advisory assistance to the communities; and to foster and establish biological studies. An appropriation of $50,000 was listed for the first fiscal year of operation of the program.

* * *

Artificial Kidney Machines

The commission named last year to consider the feasibility of buying or leasing artificial kidney machines by the Department of Health was given another year to continue its study.

* * *

Allergy Testing Program

A resolution was passed requesting the State Director of Health to add to his 1968-1969 program a study of the feasibility of an allergy testing program for school children.

R.I. ECONOMIC OPPORTUNITY PROGRAM

A resolution making an appropriation of $300,000 to the Rhode Island Office of Economic Opportunity to be distributed to community action through out Rhode Island was passed.

TRIBUTE TO DOCTOR ERIC DENHOFF

A Senate resolution was unanimously passed congratulating Dr. Eric Denhoff of Providence, recipient of the Ben Fish award in recognition of his outstanding leadership in the promotion and organization of community programs aiding handicapped children.

BILLS VETOED BY THE GOVERNOR

The Governor vetoed a bill adding practicing physicians, surgeons, and dentists to the list of those persons presently exempt from jury service. Such persons were previously permitted an exemption upon claim of exemption in a law which was repealed in 1957. (As a practical matter such persons are rarely accepted for service by the attorneys trying cases.)

* * *

The Governor did not approve a bill passed by the Assembly that would exempt a person who voluntarily and gratuitously renders reasonable assistance to a person injured in an accident from liability for ordinary negligence.

IMPORTANT BILLS NOT PASSED

Among the legislative proposals that were not passed by the Assembly were two introduced by the R.I. Medical Society. One would allow a registered nurse to administer drugs pursuant to telephone authorization or standing orders of a physician where an emergency requires such action. This bill was proposed by the Industrial Health Committee of the Society to provide prompt action to relieve severe pain in an industrial accident. The second measure, proposed by the Blood Bank Committee, would make the procurement, distribution, or use of whole blood, plasma, blood products, blood derivates, and other human tissues such as corneas, bones, or organs, the rendition of a service and not the sale of a commodity.

Left in committee also were bills that would require a certificate by a physician as to need for a hearing aid before such a device could be sold to a person, three acts that would legalize therapeutic abortion, a bill that would permit chiropractors to be participants in the Physicians Service program, and a bill that would establish a College of Health Sciences to encourage training of persons in the health field.

ON THE MEDICAL LIBRARY BOOKSHELVES

A Report on New Acquisitions to the Library. (Volumes Marked* Reference *do not circulate)

The following titles have been added to the James Henry Davenport Collection and are available for your summer reading:

EARLY AMERICAN IMPRINTS. A Guide to Works Printed in the United States, 1668-1820, by Robert B. Austin. National Library of Medicine, U.S. Department of HEW, Washington, D.C., 1961. *Reference.*

SERENDIPITY by Philip Batchelder. In Books At Brown 20:35, 1965. *Gift of Doctor Batchelder.*

MEDICAL REFERENCE WORKS, 1679-1966. A Selected Bibliography, Edited by John B. Blake and Charles Roos. Medical Library Association, Chicago, 1967. *Reference.*

ILLUSTRATIONS TO YOUNG'S NIGHT THOUGHTS Done in Water-Colour by William Blake . . . With an Introductory Essay by Geoffrey Keynes. Harvard University Press, Cambridge, 1927. *Gift of Doctor Irving A. Beck in Memory of David Cornel DeJong.*

THE TWO FACES OF MEDICINE by Carl Binger. W. W. Norton & Company, Inc., New York, 1967.

THE COMICAL CURE-ALL. Merry Medicaments. Anton Bicker, Publisher, Cincinnati, 1885. *Gift of Doctor Harold G. Calder.*

SCIENCE AND HUMANISM by Michael E. DeBakey. In Michigan Quarterly Review 7:85, Spring 1968. *Gift of Mrs. David C. DeJong.*

THE ANNOTATED SHERLOCK HOLMES. Works of Sir Arthur Conan Doyle. Edited by William S. Baring-Gould. Two Volumes. Clarkson N. Potter, Inc., New York, 1967.

A CATALOGUE OF SIXTEENTH CENTURY PRINTED BOOKS in the National Library of Medicine. Compiled by Richard J. Durling. Bethesda, Maryland, 1967. *Gift of Doctor Seebert J. Goldowsky in Memory of David Cornel DeJong.*

THE DOCTORS' STORY by Thomas Gallagher. Harcourt, Brace & World, Inc., New York, 1967.

WHERE DEATH DELIGHTS. The Story of Dr. Milton Helpern and Forensic Medicine by Marshall Houts. Coward-McCann, Inc., New York, 1967.

THE LIFE OF WILLIAM HARVEY by Geoffrey Keynes. Oxford University Press, London, 1966

DEATH IN LIFE. The Survivors of Hiroshima by Robert Jay Lifton. Random House, New York, 1967.

THE NAKED APE. A Zoologist's Study of the Human Animal by Desmond Morris. McGraw-Hill Book Company, New York, 1967.

THE STORY OF SAN MICHELE by Axel Munthe. E. P. Dutton & Co., Inc., New York, Repr. 1965.

BIBLIOGRAPHY OF THE HISTORY OF MEDICINE by the National Library of Medicine. No. 1, 1965; No. 2, 1966. Bethesda, Maryland. *Reference.*

CONAN DOYLE. A Biography by Pierre Nordon. Holt, Rinehart and Winston, Inc., New York, 1966.

COUNSELS AN DIDEALS. From the Writings of William Osler. Houghton Mifflin Company, Boston, 1908. Fourth Impression. *Gift of Veterans Hospital.*

CATALOG OF BIOGRAPHIES in the Library of the New York Academy of Medicine. G. K. Hall & Company, Boston, 1960. *Reference.*

THE DIFFICULT ART OF GIVING. The Epic of Alan Gregg by Wilder Penfield, Little, Brown and Company, Boston, 1967.

TOM RIVERS. Reflection on a Life in Medicine and Science. An Oral History Memoir Prepared by Saul Benison. M.I.T. Press, Cambridge, 1967.

MEDICINE IN ART. A Cultural History. Jean Rousselot, General Editor. McGraw-Hill Book Company, New York, 1967.

THE COMING REVOLUTION IN MEDICINE by David D. Rutstein. M.I.T. Press, Cambridge, 1967.

THE ROD AND SERPENT OF ASKLEPIOS. Symbol of Medicine by J. Schouten. Elsevier Publishing Company, Amsterdam, 1967.

MEDICAL LICENSING IN AMERICA, 1650-1965, by Richard Harrison Shryock. The Johns Hopkins Press, Baltimore, 1967.

PHYSICIAN-GENERALS IN THE CIVIL WAR by Paul E. Steiner. Charles C Thomas, Springfield, Ill., 1966.

(Continued on next page)

FAMILIAR MEDICAL QUOTATIONS. Edited by Maurice B. Strauss. Little, Brown and Company, Boston, 1968. *Reference.*

MEDICAL BOOKS, LIBRARIES AND COLLECTORS by John L. Thornton. Second, Revised Edition. Andre Deutsch Limited, London, 1966. *Reference.*

CRIME AND SCIENCE. The New Frontier in Criminology by Jurgen Thorwald. Translated by Richard and Clara Winston. Harcourt, Brace & World, Inc., New York, 1967.

THE DOUBLE HELIX. A Personal Account of the Discovery of the Structure of DNA by James D. Watson. Atheneum, New York, 1968.

GREAT IDEAS IN THE HISTORY OF SURGERY by Leo M. Zimmerman and Ilza Veith. Second, Revised Edition. Dover Publications, Inc. New York, 1967. *Gift of Rhode Island Medical Journal.*

Thanks to the generosity of Mrs. Gormly, we were able to add the following volumes to the Charles F. Gormly Collection of medicolegal books:

MODERN TRENDS IN FORENSIC MEDICINE, 2. Edited by Keith Simpson. Butterworths, London, 1967.

REFLECTIONS ON THE NEW BIOLOGY by Linus Pauling and Others. UCLA Law Review, Vol. 15, No. 2, February 1968.

LAW FOR THE PHYSICIAN by Carl Erwin Wasmuth. Lea & Febinger, Philadelphia, 1966.

The generosity of the Rhode Island Veterinary Medical Association enabled us to purchase the following material for the Veterinary Collection:

Subscriptions to the American Journal of Veterinary Research and the Journal of the American Veterinary Medical Association.

Purchases made for the general collection were:

ADVANCES IN PEDIATRICS, Volume XV, 1968. Edited by S. Z. Levine and Others. Year Book Medical Publishers, Inc., Chicago, 1968.

AMERICAN HANDBOOK OF PSYCHIATRY, Volume 3. Edited by Silvano Arieti and Others. Basic Books, Inc., New York, 1966. *Reference.*

RHEUMATIC AND CORONARY HEART DISEASE. A Medical-Surgical Symposium Sponsored by St. Barnabas Hospital, New York City. Edited by Charles P. Bailey and Others. J. B. Lippincott Company, Philadelphia, 1967.

DEPRESSION. Clinical, Experimental, and Theoretical Aspects by Aaron T. Beck. Hoeber Medical Division, Harper & Row, New York, 1967.

MANUAL OF LABORATORY AIDS FOR THE DERMATOLOGIST by Thomas Butterworth and Jasper G. Chen See. Blakiston Division, McGraw-Hill Book Company, New York, 1967.

MARVELS OF MEDICAL ENGINEERING by Norman Carlisle and Jon Carlisle. Sterling Publishing Company, Inc., New York, 1967. *Reference.*

CURRENT MEDICAL REFERENCES. Edited by Milton J. Chatton and Paul J. Sanazaro. Lange Medical Publications, Los Altos, California, 1967. *Reference.*

CIBA COLLECTION OF MEDICAL ILLUSTRATIONS. Volume 4 — Endocrine System and Selected Metabolic Diseases. Prepared by Frank H. Netter. Ciba Pharmaceutical Summit, New Jersey, 1965.

CONSERVATION OF LIBRARY MATERIALS by George Daniel Martin Cunha. The Scarecrow Press, Inc., Metuchen, New Jersey, 1967.

CONGENITAL HEART DISEASE. Correlation of Pathologic Anatomy and Angiocardiography by Jesse E. Edwards and Others. Two Volumes. W. B. Saunders Company, Philadelphia, 1965.

CLINICAL JUDGMENT by Alvan R. Feinstein. William & Wilkins Company, Baltimore, 1967.

MULTILINGUAL GUIDE FOR MEDICAL PERSONNEL by Bernard Finch. Medical Examination Publishing Company, Inc., Flushing, New York, 1967. *Reference.*

DISEASES OF THE NERVOUS SYSTEM IN INFANCY, CHILDHOOD, AND ADOLESCENCE by Frank R. Ford. Fifth Edition. Charles C Thomas, Springfield, Illinois, 1966.

French's INDEX OF DIFFERENTIAL DIAGNOSIS. Edited by Arthur H. Douthwaite. Ninth edition. Williams & Wilkins Company, Baltimore, 1967. *Reference.*

MEDICAL CARE OF THE ADOLESCENT by J. Roswell Gallagher and Others. Appleton- Century-Crofts, New York, 1966.

CURRENT PEDIATRIC THERAPY 3 by Sydney S. Gellis and Benjamin M. Kagan. W. B. Saunders Company, Philadelphia, 1968.

THE ECONOMICS OF AMERICAN MEDICINE by Seymour E. Harris. Macmillan Company, New York, 1964.

INTERNATIONAL CLASSIFICATION OF DISEASES. Eighth Revision. Adapted for Use in the United States. Volume 1, Tabular List. U.S. Department of Health, Education, and Welfare, Washington, D.C., 1967. *Reference.*

THE SKIN AND INTERNAL DISEASE. Edited by Sture A. M. Johnson. Blakiston Division, McGraw-Hill Book Company, New York, 1967.

A DICTIONARY OF DERMATOLOGICAL WORDS, TERMS AND PHRASES by Morris Leider and Morris Rosenblum. Blakiston Division, McGraw-Hill Book Company, New York, 1968. *Reference.*

ATLAS OF TECHNICS IN SURGERY by John L. Madden and Others. Two Volumes. Appleton-Century-Crofts, New York, 1964. *Reference.*

A TEXTBOOK OF NEUROLOGY by H. Houston Merritt. Fourth Edition. Lea & Febiger, Philadelphia, 1967.

DERMATOPATHOLOGY by Hamilton Montgomery. Two Volumes. Hoeber Medical Division, Harper & Row, New York, 1967.

Osler's TEXTBOOK REVISITED. Edited by A. McGehee Harvey and Victor A. McKusick. Appleton-Century-Crofts, New York, 1967.

PROGRESS IN NEUROLOGY AND PSYCHIATRY. An Annual Review Edited by E. A. Spiegel. Volume XXII. Grune & Stratton, New York, 1967.

CCS DIRECTORY, 1967-1969. Rhode Island Health, Recreation, Welfare Agencies by Rhode Island Council of Community Services, Inc., Providence, 1967. *Reference.*

MANUAL OF SKIN DISEASES by Gordon C. Sauer. Second Edition. J. B. Lippincott Company, Philadelphia, 1966.

SARCOIDOSIS by J. G. Scadding. Eyre & Spottiswoode Ltd., London, 1967.

BEDSIDE MEDICINE by Isidore Snapper and Alvin I. Kahn. Grune & Stratton, Inc., New York, 1967.

A MANUAL OF CLINICAL ALLERGY by John M. Sheldon, Robert G. Lovell, and Kenneth P. Mathews. W. B. Saunders Company, Philadelphia, 1967.

SURGICAL FORUM. Proceedings of the . . . 53rd Clinical Congress of the American College of Surgeons, October, 1967. Volume XVIII. Chicago, 1967.

ORTHOPAEDICS. Principles and Their Application by Samuel L. Turek. Second Edition. J. B. Lippincott Company, Philadelphia, 1967.

CLINICAL HEMATOLOGY by Maxwell M. Wintrobe. Sixth Edition. Lea & Febiger, Philadelphia, 1967.

We have received the following books from the Rhode Island Medical Journal. Reviews of some of them have appeared in previous issues of the Journal:

THE MANAGEMENT OF FRACTURES AND SOFT TISSUE INJURIES by the Committee on Trauma of the American College of Surgeons. Second Edition. W. B. Saunders Company, Philadelphia, 1965.

MANUAL OF PREOPERATIVE AND POSTOPERATIVE CARE by the Committee on Pre and Postoperative Care of the American College of Surgeons. W. B. Saunders Company, Philadelphia, 1967.

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Vitamin B_6	7.5 mg
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REHABILITATION SERVICES IN HOSPITALS AND RELATED FACILITIES. A Guide to Planning, Organization, and Management by the American Hospital Association. Chicago, 1966.

RELATIONSHIPS: HOSPITALS AND HOSPITAL-BASED SPECIALISTS by the American Hospital Association. Chicago, 1966.

SCIENCE FEATURE ARTICLES. Prepared by the American Medical Association. Chicago, n.d.

SURGERY OF THE PAROTID GLAND by Robin Anderson and Louis T. Byars. The C. V. Mosby Company, Saint Louis, 1965.

SYNOPSIS OF PATHOLOGY by W. A. D. Anderson. Sixth Edition. The C. V. Mosby Company, Saint Louis, 1964.

TO ENJOY MARRIAGE by W. W. Bauer and Florence Marvyne Bauer. Doubleday & Company, Inc., Garden City, New York, 1967.

Cecil-Loeb TEXTBOOK OF MEDICINE. Edited by Paul B. Beeson and Walsh McDermott. Twelfth Edition. W. B. Saunders Company, Philadelphia, 1967.

Ciba Foundation Study Group No. 29 ANTILYMPHOCYTIC SERUM. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Little, Brown and Company, Boston, 1967.

Ciba Foundation Study Group No. 24 HISTONES. Their Role in the Transfer of Genetic Information. In Honour of Academician W. A. Engelhardt. Edited by A. V. S. de Reuck and Julie Knight. Little, Brown and Company, Boston, 1966.

Ciba Foundation Study Group No. 27 THE HUMAN ADRENAL CORTEX: ITS FUNCTION THROUGHOUT LIFE. In Honour of Professor Dr. h.c. F. Verzár. Edited by G. E. W. Wolstenholme and Ruth Porter. Little, Brown and Company, Boston, 1967.

Ciba Foundation Study Group No. 25. MONGOLISM. In Commemoration of Dr. John Langdon Haydon Down. Edited by G. E. W. Wolstenholme and Ruth Porter. Little, Brown and Company, Boston, 1967.

Ciba Foundation Study Group No. 8. PROBLEMS OF PULMONARY CIRCULATION. In Honour of Prof. G. Liljestrand. Edited by A. V. S. de Reuck and Maeve O'Connor. Little, Brown and Company, Boston, 1961.

Ciba Foundation Study Group No. 28. THIAMINE DEFICIENCY: Biochemical Lesions and Their Clinical Significance. In Honour of Sir Rudolph Peters. Edited by G. E. W. Wolstenholme and Maeve O'Connor. Little, Brown and Company, Boston, 1967.

Ciba Foundation Symposium. CELL DIFFERENTIATION. Edited by A. V. S. de Reuck and Julie Knight. Little, Brown and Company, Boston, 1967.

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HUMAN DEVELOPMENT by 29 Authorities. Edited by Frank Falkner. W. B. Saunders Company, Philadelphia, 1966.

INFANT NUTRITION by Samuel J. Fomon. W. B. Saunders Company, Philadelphia, 1967.

SYNOPSIS OF NEUROLOGY by Francis M. Forster. Second Edition. The C. V. Mosby Company, Saint Louis, 1966.

THE OFFICE ASSISTANT IN MEDICAL PRACTICE by Portia M. Frederick and Mary E. Kinn. Third Edition. W. B. Saunders Company, Philadelphia, 1967.

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SYNOPSIS OF PEDIATRICS by James G. Hughes. Second Edition. The C. V. Mosby Company, Saint Louis, 1967.

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ATLAS OF CRYOSURGICAL TECHNIQUES IN OPHTHALMOLOGY by Charles D. Kelman. The C. V. Mosby Company, Saint Louis, 1966.

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THE PEDIATRICIAN'S OPHTHALMOLOGY. A Collaborative Effort of Several Authors. Edited by Sumner D. Liebman and Sydney S. Gellis. The C. V. Mosby Company, Saint Louis, 1966.

INJURIES OF NERVES AND THEIR CONSEQUENCES by S. Weir Mitchell. American Academy of Neurology Reprint Series. Dover Publications, Inc., New York, 1965.

Modern Medicine Reprint: THE PHYSICIAN'S ROLE IN HIGHWAY SAFETY by John H. Rosenow and Robert W. Watkins; THE DOCTOR AT THE SCENE OF THE ACCIDENT by Claude R. Hitchcock. Mod. Med. 25:29-52, April 10; 34-58, April 24; 32-62, May 8; 28-46, May 22; 40-56, June 5; 54-60, June 19, 1967. Minneapolis, 1967.

HEMATOLOGIC PROBLEMS IN THE NEWBORN by Frank A. Oski and J. Lawrence Naiman. Volume IV in the Series *Major Problems in Clinical Pediatrics,* Alexander J. Schaffer, Consulting Editor. W. B. Saunders Company, Philadelphia, 1966.

THE HUMAN HEART. The Layman's Guide to Heart Disease by Brendan Phibbs and Others. The C. V. Mosby Company, Saint Louis, 1967.

PATHOLOGY by Stanley L. Robbins. Third Edition. W. B. Saunders Company, Philadelphia, 1967.

A Doctor Discusses THE PRE-SCHOOL CHILD'S LEARNING PROCESS (and How Parents Can Help) by Edward B. Rosenberg and Silas L. Warner. Budlong Press Company, Chicago, 1967.

INSURANCE FOR THE DOCTOR by Harvey Sarner and Herbert C. Lassiter. W. B. Saunders Company, Philadelphia, 1967.

HANDBOOK OF ORTHOPAEDIC SURGERY by Alfred R. Shands, Jr.; R. Beverly Raney, Sr., and H. Robert Brashear. The C. V. Mosby Company, Seventh Edition. Saint Louis, 1967.

RESPIRATORY PHYSIOLOGY by N. Balfour Slonim and John L. Chapin. The C. V. Mosby Company, Saint Louis, 1967.

PATHOLOGIC PHYSIOLOGY. Mechanisms of Disease by William A. Sodeman and William A. Sodeman, Jr. Fourth Edition. W. B. Saunders Company, Philadelphia, 1967.

(Continued on next page)

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Peripatetics . . .

BANICE FEINBERG recently was host to the New England Pediatrics Society at the Rhode Island Hospital. More than a hundred attended the annual spring meeting of this society.

* * *

HERBERT P. CONSTANTINE, Director of the Multiphasic Screening Center at the Rhode Island Hospital, recently addressed the New England Public Health Association on "Multiphasic Screening."

* * *

The new appointments to the active staff at the Rhode Island Hospital have been announced: FRED H. VOHR in the Department of Medicine; RICHARD E. MURPHY in Orthopedics; MELVYN M. GELCH in Neurosurgery; VENETIA B. GEORAS and EDWIN N. FORMAN in Pediatrics; and in Radiology, LEONARD STOANE and DAVID I. KINGSLEY.

* * *

GUY A. SETTIPANE was elected president of the Rhode Island Thoracic Society for a two-year term at the Society's 1968 annual meeting. He succeeds ROBERT W. RIEMER. The Society also elected JORGE BENAVIDES, vice president; WILLIAM B. O'BRIEN, secretary-treasurer; and RICHARD D. FRARY, delegate-at-large to the Executive Committee. Dr. Benavides will serve as program chairman for the forthcoming year. PETER F. HARRINGTON continues as representative councilor to the American Thoracic Society. The Rhode Island group is the medical arm of the Rhode Island Tuberculosis and Respiratory Disease Association.

* * *

The memory of the late SAMUEL ADELSON will be perpetuated in a series of annual memorial lectures sponsored by Mrs. Samuel Adelson and the Newport Hospital. The first guest lecturer was Charles Sherwood Cameron, M.D., Sc.D., President of Hahnemann Medical College and Hospital in Philadelphia. The title of his paper, delivered at Newport Hospital on June 26, 1968, was "Perspectives in Cancer Control."

* * *

PAUL E. BARBER has been elected president of the Rhode Island Chapter of the American Academy of General Practice. FREEMAN B. AGNELLI is president-elect. Also elected are ALFRED B. GOBEILLE, vice president; DANIEL S. HARROP, secretary-treasurer; PETER C. H. ERINAKES and HENRY M. TYSZKOWSKI, delegates, and ROBERT C. HAYES and RAUL NODARSE, alternates. Elected to the board of directors are ALPHONSE R. CARDI, EDMUND T. HACKMAN, EDWARD MAHER, and JAMES A. REEVES.

* * *

MEYER SAKLAD, the head of Anesthesia Research at the Rhode Island Hospital and chairman of Working Group III of the International Standards Organization, recently attended the meeting at Basel, Switzerland. The organization attempts to devise standards of fittings and other hardware for breathing equipment, ventilators, and respirators.

LIBRARY BOOKSHELVES

(Continued from Page 519)

MEDICARE AND THE HOSPITALS. Issues and Prospects by Herman Miles Somers and Anne Ramsay Somers. *Studies in Social Economics*. The Brookings Institution, Washington, D.C., 1967.

ROENTGENOLOGIC DIAGNOSIS. A Complement in Radiology to the Beeson and McDermott Textbook of Medicine by J. George Teplick, Marvin E. Haskin, and Arnd P. Schimert. W. B. Saunders Company, Philadelphia, 1967.

APPLIED HYPNOSIS AND POSITIVE SUGGESTION in Medicine, Dentistry, and Patient Care by George A. Ulett and Donald B. Peterson. The C. V. Mosby Company, Saint Louis, 1965.

RADIOLOGY IN WORLD WAR II. Medical Department, United States Army. Office of the Surgeon General, Department of the Army, Washington, D.C., 1966. U.S. Government Printing Office, 1966.

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THE NEW WAY TO LIVE WITH DIABETES. A Complete Guide by Charles Weller and Brian Richard Boylan. Doubleday & Company, Inc., Garden City, New York, 1966.

CLINICAL PATHOLOGY. Interpretation and Application by Benjamin B. Wells and James A. Halsted, Fourth Edition. W. B. Saunders Company, Philadelphia, 1967.

HEARTS. Their Long Follow-up by Paul Dudley White and Helen Donovan. W. B. Saunders Company, Philadelphia, 1967.

LEARNING MEDICAL TERMINOLOGY STEP BY STEP by Clara Gene Young and James D. Barger. The C. V. Mosby Company, Saint Louis, 1967.

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RADIOISOTOPE SCANNING OF THE BRAIN by Bengt Bodfoss. Lund, 1965.

STUDIES ON THE PHAGOCYTIC ACTIVITY OF NEUTROPHILIC LEUKOCYTES by Lars Brandt. Munksgaard, 1967. Scand. J. Haematology, Supp. No. 2.

VENTILATORY STUDIES ON THE EUSTACHIAN TUBE by Knut Flisberg, Lund, 1966. Acta Oto-Laryngol. Supp. 219.

EXPERIMENTAL AND CLINICAL STUDIES IN AETIOLOGIC ROLE OF BILE REFLUX IN ACUTE PANCREATITIS by Kaj Hansson and Others. Stockholm, 1967. Acta Chirurgica Scand. Supp. 375.

STUDIES OF THE BLOOD CIRCULATION IN LYMPHEDEMATOUS LIMBS by Sten Jacobsson. Scand. J. Plast. & Reconstruct. Surg. Supp. 3.

DISTRIBUTION OF INSPIRED AIR by Stefan I. J. Lichtneckert. Lund, 1967.

TWO SENTENCE ESSAY

History is about the most cruel of all goddesses, she leads her triumphal car over heaps of corpses, not only in war, but also in 'peaceful' economic development. and we men and women are unfortunately so stupid that we never pluck up the courage for real progress unless urged to it by sufferings that seem almost out of proportion.

. . . Friedrich Engels

MEETING OF THE

HOUSE OF DELEGATES

OF THE

RHODE ISLAND MEDICAL SOCIETY

WEDNESDAY, SEPTEMBER 25, 1968

At the Medical Library . . . . 8 p.m.

◆ ◆ ◆

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. . . P. L. Giovacchino: Arch. Gen. Psychiat. 18:650 (June) 1968

* * *

PRECOCIUS

Dr. John Fairfield Thompson, honorary board chairman of the International Nickel Company of Canada, Ltd., and its United States subsidiary, the International Nickel Co., Inc., died yesterday in Brooklyn Hospital. He was 8 years old.

. . . N.Y. Times, July 14, 1968

EFFICIENCY

Hand-lettered notice affixed to a nurses' station at the New England Baptist Hospital, in Boston, and observed by an edgy patient:

4 P.M. TEMPS
PLEASE RECORD IN BOOK BY
3 P.M.

. . . courtesy The New Yorker, July 13, 1968

THREE SENTENCE ESSAY

Mrs. S., a lady in her sixth decade, had for one year refused operation for a colon carcinoma which had produced symptoms of intermittent intestinal obstruction. One of the factors that finally convinced her family to accept surgery was that the surgical consultant had the same last name as the patient. The family felt immeasurably reassured by this coincidence.

. . . Case report in paper on The Family of the Surgical Patient by Baudry, F., and Wiener, A.: Surgery 63:416, (March) 1968

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RHODE ISLAND MEDICAL JOURNAL



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Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia), sudden weight gain (water retention), skin reactions, black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.
Adverse Reactions: The more common ar nausea and edema. Swelling of the ankles r face may be minimized by withholding die salt, reduction in dosage or use of diuretic In elderly patients and in those with hype tension, the drug should be discontinued h the appearance of edema. The drug has b n associated with peptic ulcer and may rea-

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vate a latent peptic ulcer. The patient should be instructed to take doses immediately after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis) or a generalized allergic reaction similar to a serum sickness syndrome may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity, angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

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DIVISION OF STATE MEDICAL EXAMINERS

New Legislation Enacted For Rhode Island Provides General Examiner System With Advisory Committee.

CHAPTER 23-4
DIVISION OF STATE MEDICAL EXAMINERS

23-4-1. *Establishment of division.* — There is hereby established in the department of attorney general, the division of medical examiners.

"23-4-2. *Chief medical examiner.* — The division shall be under the immediate supervision of a chief, who shall be known as the 'chief medical examiner' and who shall be a duly licensed physician, a graduate of a regularly chartered and legally constituted medical school or college and a qualified pathologist, certified in anatomical pathology by the American Board of Pathology and who has had forensic training or experience. He shall be appointed by the attorney general with the advice and consent of the state medical examiner advisory committee, and he shall serve until his successor is appointed and has qualified, unless sooner removed by the medical examiner advisory committee for cause, upon notice and after hearing if requested by the chief medical examiner. The chief medical examiner shall have general supervision over the administration of and shall enforce the provisions of this chapter. He shall have general supervision over the deputy chief medical examiner and all assistant medical examiners. He shall promulgate such rules and regulations as he may deem necessary to effectuate the provisions of this act.

"23-4-3. *State medical examiner advisory committee.* — (a) There is hereby established the state medical examiner advisory committee.

(b) The committee shall consist of seven (7) members, three (3) of whom shall be ex-officio members, viz., the director of health, the attorney general and the superintendent of state police, or when so designated by them, their deputies, the president of the Rhode Island Medical Society, the president of the Rhode Island Society of Pathologists, or their designees, and two (2) citizens of the state to be appointed by the governor for terms of three (3) years. A citizen member shall hold office for the term of his appointment and until his successor shall have been appointed and qualified. Vacancies shall be filled by appointment for the unexpired term only.

(c) Any member of the committee may be removed from office by the governor for cause, upon notice to be heard.

(d) The ex-officio members of the committee shall serve without compensation. The other members of the committee shall be paid twenty-five dollars ($25) per diem for each committee meeting attended in the performance of their duties.

(e) The attorney general and the chief medical examiner shall be the chairman and secretary, respectively, of the committee. The committee shall meet at the call of its chairman and at least four (4) times each year, the time and place for such meetings to be fixed by the chairman.

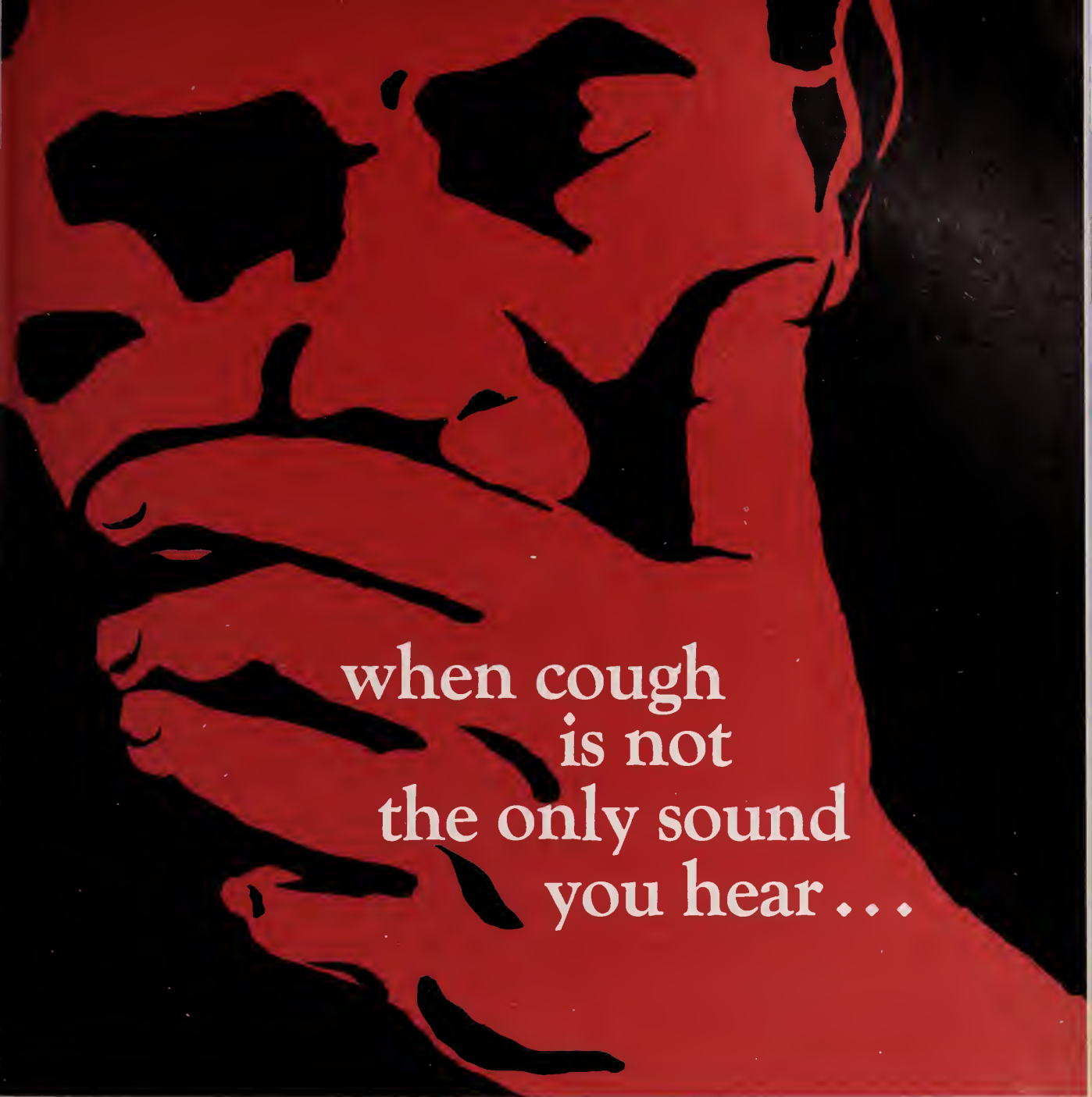
(f) The committee shall consult with and advise the chief medical examiner with respect to rules and regulations proposed to be promulgated pursuant to this act and advise the chief state medical examiner on the matters to be set out in autopsy reports and matters concerning examinations made pursuant to this chapter.

(g) The committee shall perform such other duties as are required of it by this chapter, or as may from time to time be referred to it by the chief medical examiner or the attorney general.

"23-4-4. *Deputy chief medical examiner — Assistant medical examiners.* — The chief medical examiner shall appoint a deputy chief medical examiner and such assistant medical examiners, as may be required to fulfill the purpose of this act, who may perform their duties anywhere within the state and who shall serve at the pleasure of the chief medical examiner and subject to his control and the regulations promulgated by him. The deputy chief medical examiner and the assistant medical examiners shall be duly licensed doctors of medicine.

The deputy chief medical examiner shall, in the absence of the chief medical examiner, or in the event of a vacancy in that office have and possess, in addition to the powers conferred upon him by this chapter, the powers in this chapter conferred upon the chief medical examiner, during such absence or vacancy.

(Continued on Page 529)



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*It should be pointed out that results obtained in an experimental study of this nature may not necessarily be directly extrapolated to the clinical situation as it pertains to man.

TAO Rx Information

INDICATIONS: Include streptococci, staphylococci, pneumococci and gonococci. Recommended for acute, severe infections where adequate sensitivity testing has demonstrated susceptibility to this antibiotic and resistance to less toxic agents. **CONTRAINDICATIONS AND PRECAUTIONS:** Not recommended for prophylaxis or in the treatment of infectious processes which may require more than ten days continuous therapy. In view of the possible hepatoxicity of this drug when therapy beyond ten days proves necessary, other less toxic agents should be used. If clinical judgement dictates continuation of therapy for longer periods, serial monitoring of liver profile is recommended, and the drug should be discontinued at the first evidence of any form of liver abnormality. When treating gonorrhea in which lesions of primary or secondary syphilis are suspected, proper diagnostic procedures, including darkfield examinations, should be followed. In other cases in which concomitant syphilis is suspected, monthly serological tests should be made for at least four months. Contraindicated in pre-existing liver disease or dysfunction, and in individuals hypersensitive to the drug. Although reactions of an allergic nature are infrequent and seldom severe, those of the anaphylactoid type have occurred on rare occasions. When used in streptococcal infections, therapy should be continued for ten days to prevent the development of rheumatic fever or glomerulonephritis. The use of antibiotics may occasionally permit overgrowth of nonsusceptible organisms. A resistant infection or superinfection requires re-evaluation of the patient's therapy. In the event such occurs with this drug the medication should be discontinued, and specific antibacterial and supportive therapy instituted.

References: 1. Isenberg, H. D.: Clinical Evaluation of Laboratory Guidance to Antibiotic Therapy; Health Laboratory Science (July) 1967. 2. Saslaw, S., Carlisle, H. N.: Studies on Therapy of Staphylococcal Infections in Monkeys. 1. Comparison of Cloxacillin, Triacetyloleandomycin and Erythromycin. Proc. Soc. Exp. Biol. & Med.: Vol. 125, No. 4 (Aug.-Sept.) 1967.

ROERIG
J. B. ROERIG DIVISION
CHAS. PFIZER & CO., INC.
235 EAST 42nd STREET
NEW YORK, N. Y. 10017

In the complex picture of moderate to severe anxiety...



there is a new reason for prescribing Mellaril (Thioridazine HCl)

effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. T. following is a brief precautionary statement.

Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reacti (e.g., blood dyscrasias, jaundice) to phenothiazines Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports o leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within tl recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in femal than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess o 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred visior constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticari type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significar disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

Mellaril®
(Thioridazine HCl)
25 mg. t.i.d.

for moderate to severe anxiety and mixed anxiety-depression

SANDOZ SANDOZ PHARMACEUTICALS, HANOVER, N. J.

MEDICAL EXAMINERS

(Continued from Page 528)

"23-4-5. *Class of service.* — The chief medical examiner, the deputy chief medical examiner and the assistant medical examiners shall be in the unclassified service of the state.

"23-4-6. *Clerical and technical assistance.* — The chief medical examiner may employ adequate clerical and technical assistance to carry out the purpose of this chapter, all of whom shall be in the unclassified service of the state.

"23-4-7. *Temporary expert assistance.* — The chief medical examiner shall have authority to call upon and employ such persons, skilled in science, pathology, or otherwise as will aid him in the performance of his duties, as occasion may necessitate. All such persons employed on a temporary basis shall be in the unclassified service.

"23-4-8. *Employees of other state agencies.* — The chief medical examiner shall have authority to procure and utilize, from time to time, the service of employees of other departments or agencies of the state, whether they be in the classified or unclassified service.

"23-4-9. *Bonds of examiners.* — The chief medical examiner, the deputy chief medical examiner, and each assistant medical examiner shall, within thirty (30) days after his appointment, and before entering upon the duties of his office, give bond with surety to, and to the satisfaction of, the general treasurer in the sum of two thousand dollars ($2,000) for the faithful performance of his duties. If the condition of any such bond be broken, to the injury of any person, actions may be brought upon such bond as upon the official bonds of sheriffs.

"23-4-10. *Bodies to be viewed by examiners — Notification.* — The chief medical examiner, the deputy chief medical examiner or the assistant medical examiners shall make examinations as hereinafter provided upon the bodies of such persons only as appear to have met death from violence, or suddenly when in apparent good health, or when unattended by a physician, or in any suspicious or unnatural manner, or as the result of an abortion or suspected abortion, or disease resulting from injury; and in such event the division of state medical examiners shall immediately be notified by the attending physician, law enforcement officer, undertaker, hospital or by any other person having responsibility for burial or cremation in a manner prescribed by the chief medical examiner who shall promulgate rules and regulations for that purpose, with the advice and consent of the medical examiner advisory committee; provided, however, that in case any prisoner in the adult correctional institutions in a reformatory dies while so imprisoned, the chief medical examiner shall be notified and thereupon view the body of such deceased prisoner or cause said body to be viewed by his deputy or one of the assistant medical examiners. Any person charged with the responsibility of notifying the division of medical examiners of any such death who shall fail or neglect to give such notice shall upon conviction be deemed guilty of misdemeanor and upon conviction shall be fined not more than five hundred dollars ($500) nor sentenced to more than one (1) year in jail.

"23-4-11. *Procedure for investigation of deaths.* — When the division of medical examiners has notice that there has been found or is lying within this state, the body of a person who is supposed to have come to his death by violence, or in any manner as stated in 23-4-10 above, the chief medical examiner, the deputy chief medical examiner or an assistant medical examiner shall forthwith repair to the place where such body lies and take charge of same; view the same and make personal inquiry into the cause and manner of death. If such body be found at the residence of the deceased, the chief medical examiner, deputy or assistant medical examiner shall not remove such body therefrom unless necessary for further examination or autopsy.

Where it appears that the deceased came to his or her death as the result of injuries received from a highway accident, the state police or any superior officer of the local police may order the removal of the body from the place of death upon completion of their investigation as to the cause and manner of death to the funeral home designated by a family representative of the deceased or to another appropriate place.

"23-4-12. *Death from natural causes in public place.* — In the event that a person dies suddenly on a public highway or elsewhere in the public view and such death appears to be from natural causes, the removal of such body, so that it shall not be exposed to public view, and the transfer of said body to the home of the deceased or to another appropriate place, may be ordered by any superior police officer.

"23-4-13. *Compensation for recovery of body from water.* — When services are rendered in bringing to land the dead body of a person found in any of the harbors, rivers or waters of the state, the chief medical examiner may allow such compensation for such services as he deems reasonable; but this privilege shall not entitle any person to compensation for services rendered in search for a dead body.

"23-4-14. *Autopsies.* — The chief medical examiner, shall, if he deems it necessary, or if requested in writing by the attorney general, make an autopsy or cause an autopsy to be made by a

(Continued on next page)

qualified pathologist, in the presence of two (2) or more discreet persons as witnesses. Said chief medical examiner or such qualified pathologist shall then and there carefully reduce to writing every fact and circumstance tending to show the condition of the body and the cause and manner of death, together with the names and addresses of said witnesses, which record he shall subscribe. Should the chief medical examiner deem it advisable to have present a physician as one (1) of the witnesses as aforesaid, such physician shall also subscribe the record of the autopsy, and for such service he shall receive a compensation. Any witness not a physician who shall be engaged by the chief medical examiner to take notes of the autopsy during said autopsy shall be compensentated.

The chief medical examiner shall, after having made an autopsy as above provided, or having caused an autopsy to be made, file a duly attested copy of the record of his autopsy, with the attorney general; and shall in all cases certify to the officer having the custody of the records of deaths in the town in which the deceased, if known, or when the name and residence cannot be ascertained a description of the deceased, as fully as possible may be, for identification, together with the cause and manner by and in which he came to his death.

"23-4-15. *Notice of suspected homicide—Report.* — If the chief medical examiner, deputy or assistant medical examiner is of the opinion that the death was caused by the act or neglect of some person other than the deceased, he shall at once notify the the attorney general, and the police of the city or town where the body was found or in which it lies.

If any person shall be arrested and charged with causing any such death, the person so arrested shall be entitled to receive a copy of the record of the autopsy, as aforesaid, upon written request delivered to the attorney general.

"23-4-16. *Disposition of body after examination or authorized autopsy.* — Such examiner shall, after any examination or authorized autopsy, promptly release such body to the relatives or representatives of the deceased, or if there are no relatives or representatives known to the examiner, he shall forthwith turn the body over to the director of public welfare of the city or town where the body is lying, except that such examiner may retain as long as may be necessary any portion of such body necessary for the determination of the cause and/or manner of death. Such director of public welfare shall thereupon cause the body to be decently buried in accordance with the provisions of this chapter.

"23-4-17. *Disposition of unclaimed bodies.* — After a medical examiner has viewed or made an

(Continued on Page 536)



Blessed event?

Not entirely, when nausea and vomiting occur in early pregnancy. Emetrol offers prompt and safe relief. Local rather than systemic action provides emesis control on contact with the hyperactive G.I. tract.* In a study of 123 pregnant women, the drug produced measurable improvement in 79% of patients in controlling vomiting.[1]

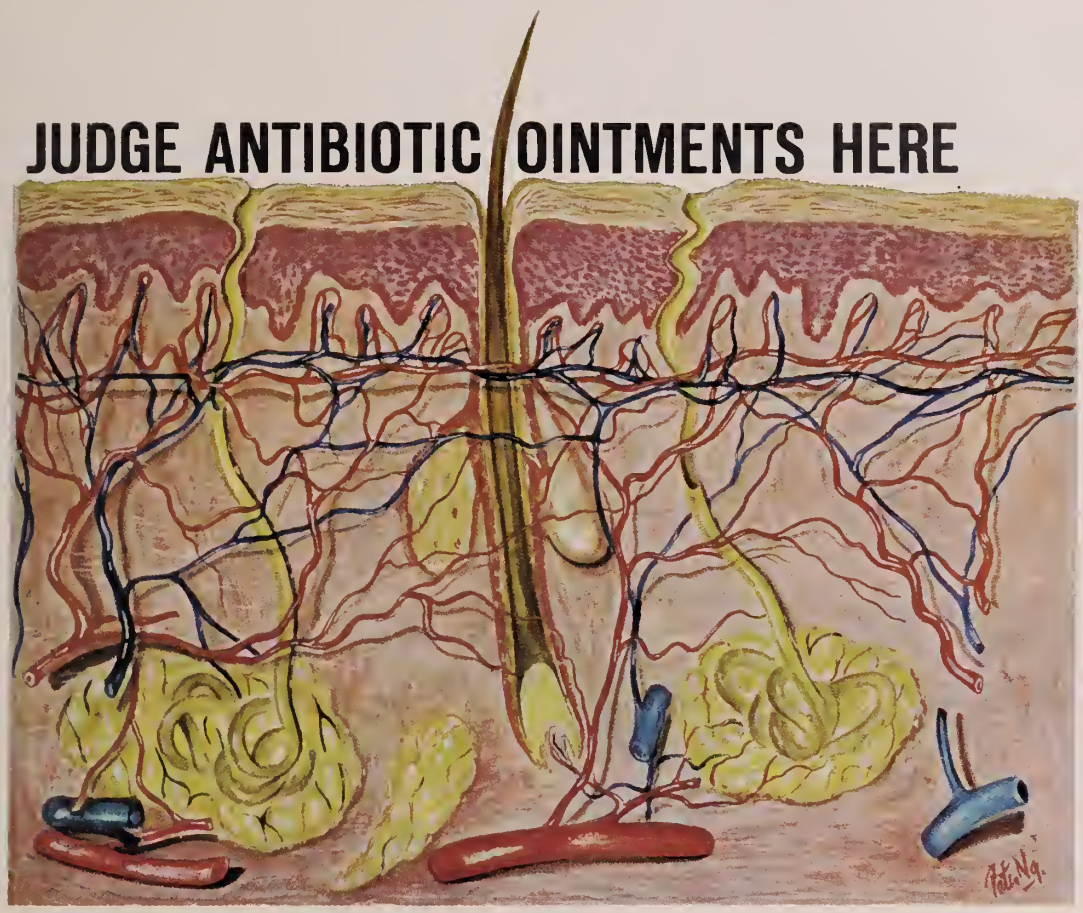
*As shown by *in vitro* studies.
1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. *65*:311 (Feb.) 1953.



ROHRER WILLIAM H. RORER, INC.
Fort Washington, Pa.

Emetrol®
phosphorated carbohydrate solution
emesis control

JUDGE ANTIBIOTIC OINTMENTS HERE



Results on skin are final proof of any topical antibiotic's effectiveness

No in vitro test can duplicate a clinical situation on living skin. 'Neosporin' (polymyxin B—bacitracin—neomycin) Ointment has consistently proven its effectiveness in thousands of cases of bacterial skin infection. The spectra of the three antibiotics overlap in such a way as to provide bactericidal action against most pathogenic bacteria likely to be found topically. Diffusion of the antibiotics from the special petrolatum base is rapid since they are insoluble in the petrolatum, but readily soluble in tissue fluids. The Ointment is bland and nonirritating.

Caution: As with other antibiotic preparations, prolonged use may result in overgrowth of nonsusceptible organisms and/or fungi. Appropriate measures should be taken if this occurs. Articles in the current medical literature indicate an increase in the prevalence of persons allergic to neomycin. The possibility of such a reaction should be borne in mind.

Contraindications: This product is contraindicated in those individuals who have shown hypersensitivity to any of its components.

Supplied: Tubes of 1 oz., ½ oz. with applicator tip, and ⅛ oz. with ophthalmic tip.

Complete literature available on request from Professional Services Dept. PML.

'NEOSPORIN'®

brand

POLYMYXIN B-BACITRACIN-NEOMYCIN OINTMENT

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

Muscle in Spasi



and Valium (diazepam)

The ability of Valium to help relieve skeletal muscle spasm—as well as psychic tension—demonstrates its clinical value and versatility.

The muscle-relaxant effect obtained with Valium, used adjunctively with other drugs or physiotherapy, favorably affects the entire cluster of spasm-related symptoms . . . helps accelerate return to normal activity.

When skeletal muscle spasm and psychic tension coexist, the calming effect of Valium is an added therapeutic benefit that contributes to the total management of the patient.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Valium®(diazepam)
2-mg, 5-mg, 10-mg tablets

ROCHE
Roche® LABORATORIES
Division of Hoffmann-La Roche Inc.
Nutley, New Jersey 07110



Louie lost weeks with
a painful shoulder. That's a lot of fish.
It might have been different with **Butazolidin® alla**

100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

If it doesn't work in a week, forge

ut please don't forget this:

ontraindications: Edema; danger of cardiac ecompensation; history or symptoms of peptic cer; renal, hepatic or cardiac damage; story of drug allergy; history of blood dys- asia. The drug should not be given when the atient is senile or when other potent drugs are ven concurrently. Large doses of the alka rmulation are contraindicated in glaucoma.

arning: If coumarin-type anticoagulants are ven simultaneously, watch for excessive crease in prothrombin time. Instances of evere bleeding have occurred. Persistent or evere dyspepsia may indicate peptic ulcer; erform upper gastrointestinal x-ray diagnostic sts if drug is continued. Pyrazole compounds ay potentiate the pharmacologic action of lfonylurea, sulfonamide-type agents and sulin. Carefully observe patients receiving ch therapy. Use with caution in the first tri- ester of pregnancy and in patients with yroid disease.

recautions: Before prescribing, carefully elect patients, avoiding those responsive to utine measures as well as contraindicated atients. Obtain a detailed history and a com- ete physical and laboratory examination, cluding a blood count. The patient should not ceed recommended dosage, should be osely supervised and should be warned to scontinue the drug and report immediately fever, sore throat, or mouth lesions (symp- ms of blood dyscrasia); sudden weight gain ater retention); skin reactions; black or tarry ools or other evidence of intestinal hemor- age occur. Make complete blood counts at eekly intervals during early therapy and at -week intervals thereafter. Discontinue the ug immediately and institute counter- easures if the white count changes signifi- antly, granulocytes decrease, or immature rms appear. Use greater care in the elderly nd in hypertensives.

dverse Reactions: The more common are ausea and edema. Swelling of the ankles or ce may be minimized by withholding dietary alt, reduction in dosage or use of diuretics. In derly patients and in those with hypertension e drug should be discontinued with the ppearance of edema. The drug has been ssociated with peptic ulcer and may reac- vate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.



Dosage in Painful Shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

In selecting the appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response. (6)R 46-070-A

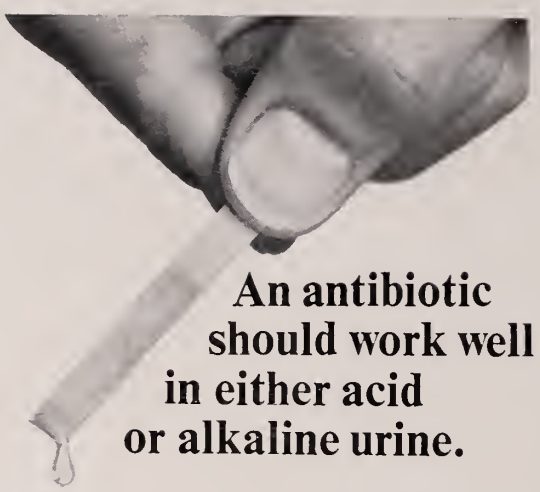
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please see full prescribing information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

8U-5926

Butazolidin® alka Geigy

Capsules
100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide



An antibiotic should work well in either acid or alkaline urine.

It isn't always necessary to adjust urinary pH in treating G.U. infections.

Not when the causative organism is a strain sensitive to DECLOMYCIN® Demethylchlortetracycline, as is often the case.

DECLOMYCIN remains stable and active in either acid or alkaline urine. So there's no need to acidify the urine to keep the antibiotic at work.

Why match the urine to the antibiotic...when you can match the antibiotic to the urine...by prescribing DECLOMYCIN. A b.i.d. dosage makes therapy convenient for your patient.

Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system – anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin – maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney – rise in BUN, apparently dose-related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions–urticaria, angioneurotic edema, anaphylaxis. Teeth – dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; Tablets: film coated – 300 mg, 150 mg and 75 mg of demethylchlortetracycline HCl.

355-8

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

now she can cope...

thanks to

Butisol SODIUM®

(SODIUM BUTABARBITAL)

the "daytime sedative" for everyday situational stress

When stress is situational—environmental pressure, worry over illness—the treatment often calls for an anxiety-allaying agent which has a prompt and predictable calming action and is remarkably well tolerated. BUTISOL SODIUM (sodium butabarbital) meets this therapeutic need.

After 30 years of clinical use . . . still a first choice among many physicians for dependability, safety, and economy in mild to moderate anxiety.

Contraindications: Porphyria or sensitivity to barbiturates.

Precautions: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression.

Adverse Reactions: Drowsiness at daytime sedative dose levels, skin rashes, "hangover" and systemic disturbances are seldom seen.

Warning: May be habit forming.

Usual Adult Dosage: As a daytime sedative, 15 mg. (¼ gr.) to 30 mg. (½ gr.) t.i.d. or q.i.d.

Available for daytime sedation: Tablets, 15 mg. (¼ gr.), 30 mg. (½ gr.); Elixir, 30 mg. per 5 cc. (alcohol 7%).

BUTICAPS® [Capsules BUTISOL SODIUM (sodium butabarbital)] 15 mg. (¼ gr.), 30 mg. (½ gr.).



McNEIL McNeil Laboratories, Inc., Fort Washington, Pa.

Easy on the Budget...
Easy on the Mother
Tablets & Elixir
For Iron Deficiency Anemia

BREON LABORATORIES INC.
Subsidiary of Sterling Drug Inc.
90 Park Avenue, New York, N.Y. 10016

FAMOUS Fergon®
brand of FERROUS GLUCONATE

To fight TB-find it first!

Make tuberculin testing routine with every physical examination.



TUBERCULIN, TINE TEST (Rosenthal)

Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.

Lederle

330-8/6135

COMPLETE, ACCURATE AND PROMPT ANALYSIS

HOPKINS MEDICAL LABORATORY

322 Broadway

Providence, Rhode Island

Tel. GAspee 1-7244

Res.: 725-5996

Angelo G. Viticonte, AB;MT.
Director

Ascanio Di Pippo, Ph.D.
Biochemistry

Abbott Antihypertensive Building Blocks

A simplified approach to the practical management of hypertension



Enduron: (methyclothiazide) A basic building block for mild hypertensives



Excellent day-long Na^+ output, yet easy on the K^+

Enduron provides an excellent starting therapy. Your patient' sodium excretion is greatly enhanced. Yet potassium loss is low

The therapeutic action is smooth, and persists for a full 24 hours With Enduron you can prescribe convenient once-a-day dosag without skimping your patients on day-long thiazide effectiveness

Of course, as with all thiazides, supplemental dietary potassiur should also be considered.

Use Enduron as a basic therapy in patients with mild to moc erate hypertension. A single 5-mg. tablet each day is ample i most cases.

Once a day, every day

ENDURON

METHYCLOTHIAZIDE

MILD TO MODERATE TO SEVER



See Brief Summary on final page of advertisement

Enduronyl: Its deserpidine component adds response in moderate hypertension



Less frequent rauwolfia side effects than with reserpine

When you wish to build further response, consider shifting to Enduronyl.

Enduronyl adds a building block of *deserpidine*. This is a purified rauwolfia alkaloid available only from Abbott. It adds good antihypertensive and tranquilizing activity. Yet its incidence of untoward effects, particularly lethargy and depression, is lower than with reserpine.

Enduronyl is available plain or Forte. The latter provides its variation where most helpful, by doubling the deserpidine.

Use Enduronyl for patients throughout the broad range of mild to moderately severe hypertension.

Once a day, every day

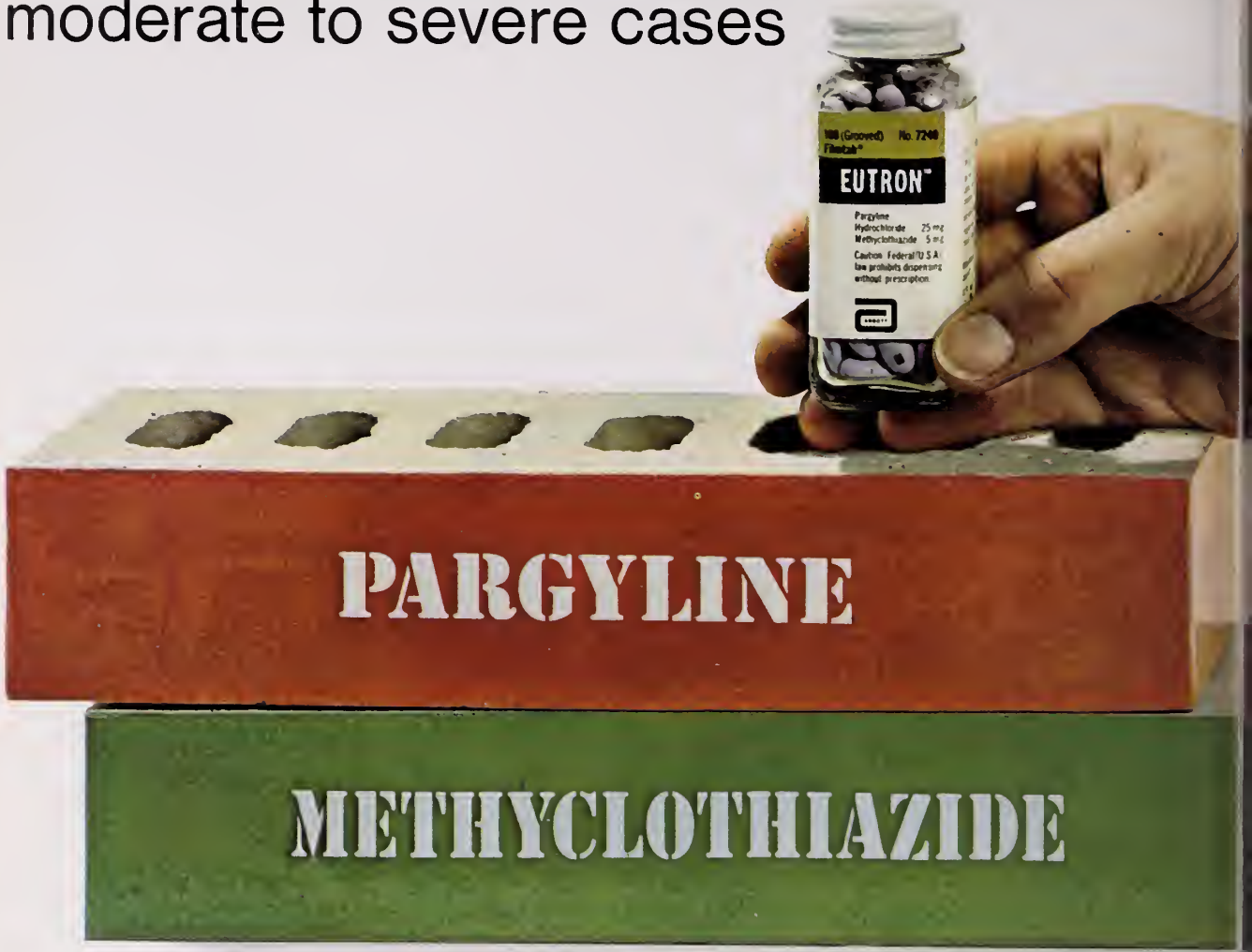
ENDURONYL®

METHYCLOTHIAZIDE 5 mg. with
DESERPIDINE 0.25 mg. or (FORTE) 0.5 mg.



See Brief Summary on final page of advertisement

Eutron: A unique combination for handling moderate to severe cases



Affords almost uniform diastolic reduction in all body positions

Eutron lowers diastolic pressures nearly equally, whether your patient is standing up or lying down.

Thus, in clinical trials, average *standing* diastolic readings were reduced from 112 pre-treatment to 90 post-treatment; *sitting* from 115 to 95; and *recumbent* from 112 to 94.

Note that following Eutron, the diastolic reductions were nearly alike in all three body positions.

Use Eutron for managing your moderate to severe cases. Its building blocks enhance each other; hence lesser doses often suffice.

Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 mg.
with METHYCLOTHIAZIDE 5 mg.

MILD TO MODERATE TO SEVERE



See Brief Summary on final page of advertisement

801094

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Edema and mild to moderate hypertension (Enduron), and mild to moderately severe hypertension (Enduronyl). More potent agents, if added, can be given at reduced dosage.

Contraindications: Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease or impending hepatic coma (hepatic coma due to hypokalemia has been reported in patients on thiazides). Do not use Enduronyl in severe mental depression, suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity where there is history of allergy or asthma. If added potassium is indicated, dietary supplementation is recommended. Reserve enteric-coated potassium tablets for cautious use only when necessary, as they may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation often requiring surgery; discontinue them immediately if abdominal pain, distention, nausea, vomiting, or g.i. bleeding occurs. Neither Enduron nor Enduronyl contains added potassium.

Precautions: Use thiazides cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery, thiazides may reduce response to vasopressors, and increase response to tubocurarine. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia) in all patients. In hypokalemia (especially in digitalized patients) give supplemental potassium. In hypochloremic alkalosis, give supplemental chloride.

Use rauwolfias with caution in patients with history of peptic ulcer. Rauwolfias with anesthetics may produce hypotension and bradycardia. Discontinue Enduronyl two weeks before elective surgery. Consider vagal blocking agents during emergency surgery. In epilepsy, adjust anticonvulsant dosage. In electroshock, shorten stimulus strength and duration. In occasional patients with depressive tendencies, rauwolfias may precipitate severe mental depression that usually disappears when drug is stopped.

Adverse Reactions: Thiazide reaction include blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, serum uric acid or blood sugar; anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, symtomatic gout, and pancreatitis. Cutaneous vasculitis in the elderly has been reported with other thiazides. Adverse effects with deserpidine are qualitatively similar to those with reserpine, but their incidence is lower. These include nasal stuffiness, abdominal cramps or diarrhea, nausea, headache, weight gain, reduced libido and potency, peptic ulcer aggravation, epistaxis, skin eruption, asthma in susceptible patients, electrolyte imbalance, excessive salivation, and a reversible Parkinson's syndrome. Excessive drowsiness, fatigue, weakness, and nightmares may signal mental depression. Thrombocytopenia, purpura, and a symptom manifested by dull sensorium, deafness, uveitis, glaucoma, and optic atrophy are rare allergic reactions to other rauwolfias. Hypotension from antihypertensive agents may precipitate angina attacks in susceptible individuals. Usually adverse reactions disappear when drug is withdrawn.

EUTRON™

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications—Moderate to severe hypertension.

Contraindications—Pheochromocytoma, paranoid schizophrenia, hyperthyroidism and advanced renal failure. Not recommended in malignant hypertension, children under 12, pregnant patients.

Do not use with: centrally or peripherally acting sympathomimetic drugs; foods high in tyramine (e.g., aged and natural cheeses); parenteral reserpine or guanethidine; imipramine, amitriptyline, desipramine, nortriptyline or their analogues; other monoamine oxidase inhibitors; methyldopa or dopamine; separate Eutron and these agents by two weeks.

Sensitivity to thiazides; severe renal disease (except nephrosis) or shutdown; severe hepatic disease; impending hepatic coma from thiazide-induced hypokalemia.

Warnings—Patients: 1. No other drugs (particularly "cold preparations" and antihistamines), cheese or alcohol without physician's consent. 2. Promptly report orthostatic symptoms, severe headache, other unusual symptoms. 3. Angina pectoris or coronary artery disease patients must not increase physical activity with improved anginal symptoms or well-being.

Physicians: 1. Use antihistamines, hypnotics, sedatives, tranquilizers and narcotics (meperidine contraindicated) cautiously in reduced doses. 2. Stop Eutron two or more weeks before elective surgery; in emergency surgery reduce premedication (narcotics, sedatives, analgesics, etc.) to 1/4 to 1/5; carefully adjust anesthetic dosage to patient response. 3. Use cautiously in advanced renal failure. 4. Pargyline may induce hypoglycemia. 5. Consider possible sensitivity reactions when a history of allergy or asthma is present. 6. If potassium is indicated, dietary supplement is recommended; enteric-coated potassium tablets may induce serious or fatal small bowel lesions (stenosis with or without ulceration), cause obstruction, hemorrhage, and perforation frequently requiring surgery; discontinue medication immediately if abdominal pain, distention, nausea, vomiting or gastrointestinal bleeding occurs; Eutron does not contain added potassium. 7. Possible systemic lupus erythematosus has been reported for thiazides.

Precautions—Pargyline: Use cautiously at reduced dosage: caffeine, alcohol, antihistamines, barbiturates, chloral hydrate, other hypnotics, sedatives, tranquilizers, narcotics. Periodically do urinalyses, blood counts, liver function tests, etc. Use with caution in liver disease. Watch for orthostatic hypotension, especially in impaired circulation (e.g., angina pectoris, coronary artery disease, cerebral arteriosclerosis); also, augmented hypotension in concomitant febrile illnesses. Reduce or discontinue if hypotension is severe. In impaired renal function watch for cumulative drug effects, elevated BUN and other evidence of progressive renal failure; withdraw drug if these persist. In surgery increased central depressant response (hypotension and increased sedative effect) can be controlled by (1) discontinuing at least two weeks prior; (2) in emergency surgery lowering dose of premedication; (3) when necessary, administering a vasopressor. Do not use in hyperactive and hyperexcitable patients. Pargyline may unmask severe psychotic symptoms where emotional problems pre-exist. Use cautiously in Parkinsonism, especially with antiparkinsonian agents. In prolonged therapy, examine for change in color perception, visual fields, fundi and visual acuity. Also, prolonged therapy has made certain patients refractory to nerve blocking effects of local anesthetics.

Methyclothiazide: Use cautiously in severe renal dysfunction, impaired hepatic function or progressive liver disease; also in pregnancy (bone marrow depression, thrombocytopenia, and altered carbohydrate metabolism have been reported in certain newborn). In surgery thiazide may reduce vasopressor response and increase tubocurarine response. Antihypertensive response may be enhanced following sympathectomy. Watch for electrolyte imbalance (e.g., hyponatremia). Give supplemental chloride if hypochloremic alkalosis occurs and supplemental potassium if hypokalemia occurs (especially in digitalized patients). Thiazides may decrease serum P.B.I. without signs of thyroid disturbance.

Adverse Reactions—Pargyline: Orthostatic hypotension and associated symptoms, mild constipation, fluid retention, edema, dry mouth, sweating, increased appetite, arthralgia, nausea, vomiting, headache, insomnia, difficult in micturition, nightmares, impotence, delayed ejaculation, rash, purpura, weight gain, hyperexcitability, increased neuromuscular activity and other extrapyramidal symptoms. Drug fever is extremely rare. Reduction in blood sugar and hypoglycemic effects are possible. Congestive heart failure has been reported in a few patients with reduced cardiac reserve.

Methyclothiazide: Blood dyscrasias (thrombocytopenia with purpura, agranulocytosis, aplastic anemia); elevation of BUN, blood sugar or serum uric acid (gout may be induced); anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice and pancreatitis. Cutaneous vasculitis in elderly patients has been reported with other thiazides.

If side effects are severe or persist, reduce dosage or withdraw drug. 804438R

ABBOTT

TM-TRADEMARK

MEDICAL EXAMINERS

(Continued from Page 530)

examination of or performed or caused to be performed an autopsy of the dead body of a stranger, he shall cause the body to be taken to the public morgue, if any there be, of the city or town in which the body lies, for identification, and shall forthwith notify the director of public welfare of such city or town and the state director of health that the body has been taken to such public morgue, and turn over to such director of public welfare any evidence in his possession as to the identity of such stranger or of the relatives of such stranger; provided, that if there be no such public morgue he shall forthwith turn the body over to the director of public welfare of such city or town, together with any evidence in his possession as to the identity of such stranger or of the relatives of such stranger. If such body is not claimed at or before the expiration of twenty-four (24) hours thereafter and if the body is not claimed by the department of public health in accordance with the provisions of 23-42-7, the director of public welfare of such city or town shall give public notice of its finding and a description thereof, and within a reasonable time thereafter cause the body to be decently buried; and if he certifies that he has made careful inquiry and that to the best of his knowledge and belief the person found dead is a stranger having no settlement in any town of the state, the actual expense of burial shall be paid from the general treasury upon proper vouchers therefor approved by the director of social welfare. In all other cases the expense of the burial shall be first paid by the town wherein the body is found, and such town may recover the money so paid from the town where such person last had a settlement; provided, however, that the general treasurer or any town ultimately paying such burial expenses, shall have the right to recover such burial expenses from the estate of the deceased person.

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• • •

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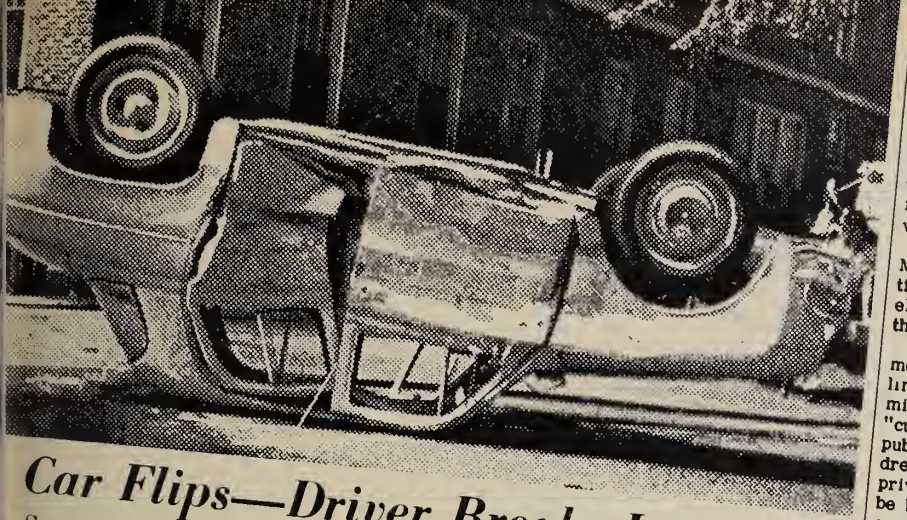
"23 4-18. *Effects and property of deceased.* — The chief medical examiner, his deputy or assistant medical examiner as the case may be, shall take into his possession all articles and property of the deceased on or about the body and shall deliver the same to the office of the chief medical examiner if an autopsy is ordered, but shall otherwise deliver them to a member of the family taking a receipt for the same. Provided, however, any letter, note or any other written instrument, the contents of which relate to the manner or cause of the death of the deceased, shall be permanently retained in the files of the division. If an autopsy is ordered the chief medical examiner shall upon completion of investigation deliver all other articles or property to a member of the family of the deceased taking a receipt therefrom and if any dispute exists among members of the family he shall hold the same for the executor or administrator of the estate of the deceased when appointed. In the event that death shall have occurred in a hotel or other public place wherein possessions of the deceased may be lying, the assistant medical examiner, the deputy or the chief medical examiner, as the case may be, shall make suitable arrangements for the protection of the property.

"23-4-19. *Penalty for failure to deliver property.* — A medical examiner who fraudulently neglects or refuses to deliver any such property within three (3) days, after demand upon him therefor, shall be imprisoned not exceeding two (2) years or be fined not exceeding five hundred ($500) dollars.

"23 4-20. *Offices, morgue and supplies.* — The attorney general shall provide the chief medical examiner with a centrally located morgue and with such laboratories, furniture, equipment, records and supplies as may be required in the conduct of his office. The attorney general may, if he deems it advisable to do so, with the advice and consent of the *chief medical examiner* and the medical examiner committee, enter in agreements with the state departments of health or social welfare or with any public or private college or university, school of medicine or hospital for the use of certain of its laboratories, morgues and other technical facilities. In the discretion of the attorney general and with *the approval of the chief medical examiner* and with the advice and consent of the medical examiner committee the chief medical examiner and his assistants may be made available to such educational institutions for the teaching of legal medicine and other subject closely related to their duties.

"23-4-21. *Reports and records of examiners.* — Said medical examiners shall make reports on examinations made in accordance with the provisions of this chapter, and shall forward such reports to

(Continued on Page 537)



STAFF PHOTO

Car Flips—Driver Breaks Leg

, Sept. 7. John P. Jones of incurred a broken leg today driving

Patrolman B. R. Brown, the car hit a fire hydrant and flipped over on its top

Hasn't he

board h statemer issue, a tember th fications' ton dicta Althou made Mo down by a ter shar flat obje was pass Board McCredi tion" s' elimir the st. The c ment ca limit ra mile li "cut-of public dren priv be b or th schoo The so soi rather

He's had enough excitement for one day.

For the patient who has been through an accident, the worry and anxiety following the experience may actually heighten the perception of pain. This is why there's a classic 1/4 grain *sedative* dose of phenobarbital in Phenaphen with Codeine—*to take the nervous "edge" off,* so the rest of the formula can control the pain more effectively.

Phenaphen® with Codeine

Phenaphen® with Codeine No. 2, No. 3, or No. 4 contains: *Phenobarbital* (1/4 gr.), 16.2 mg. Warning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; Hyoscyamine sulfate, 0.031 mg.; Codeine Phosphate, 1/4 gr. (No. 2), ½ gr. (No. 3), or 1 gr. No. 4). (Warning: may be habit forming).

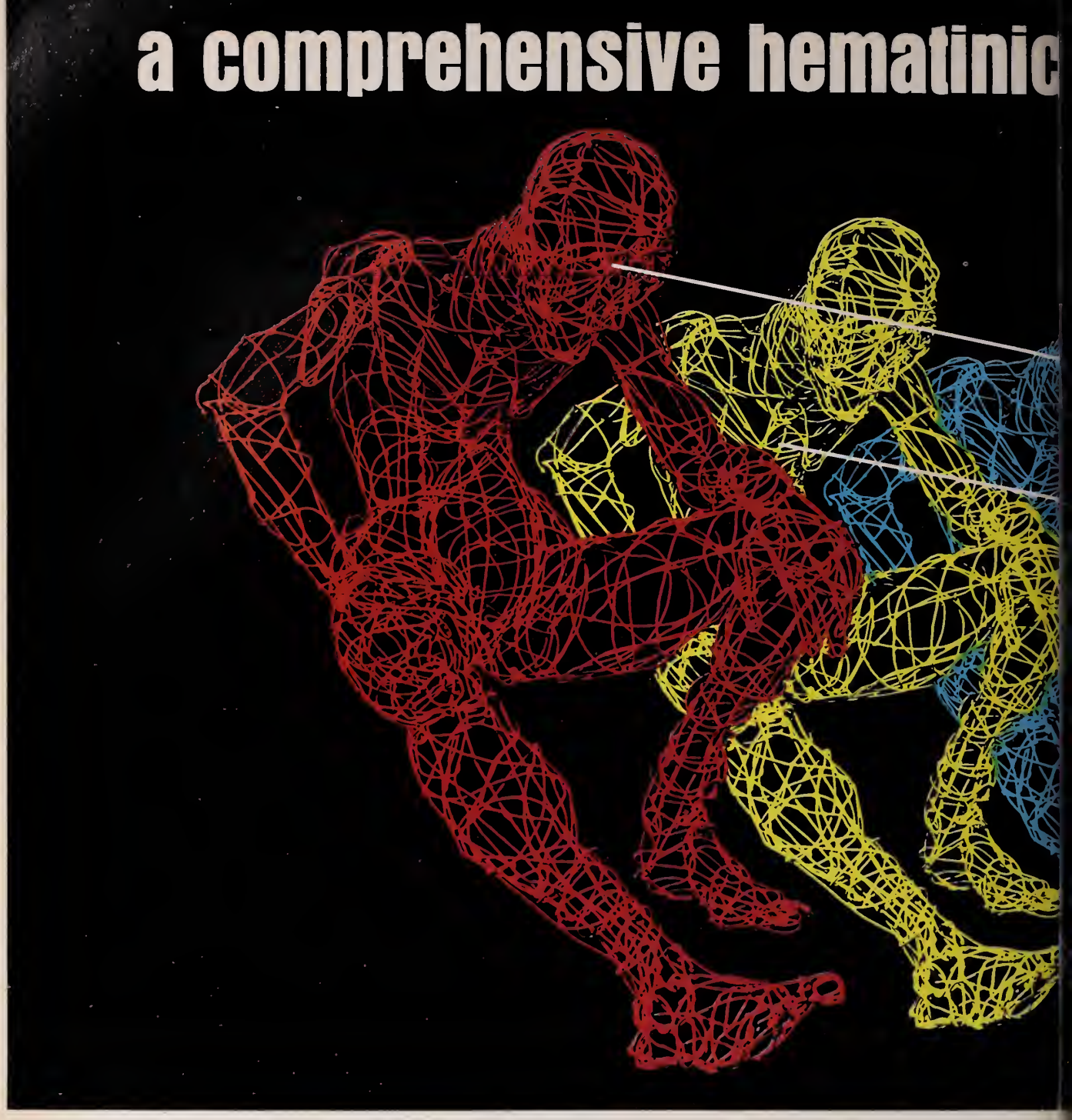
THE COMPOUND ANALGESIC THAT CALMS INSTEAD OF CAFFEINATES

Indications: Phenaphen with Codeine provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** 1 or 2 capsules at 2 to 4 hour intervals, or as directed by physician. For further details see product literature.

A. H. ROBINS COMPANY
RICHMOND, VA. 23220 A·H·ROBINS



a comprehensive hematinic



Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150	mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin (The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	7.5	mcg.
Iron, Elemental (as Ferrous Fumarate)	110	mg.
Ascorbic Acid (Vitamin C)	75	mg.
Folic Acid	1	mg.

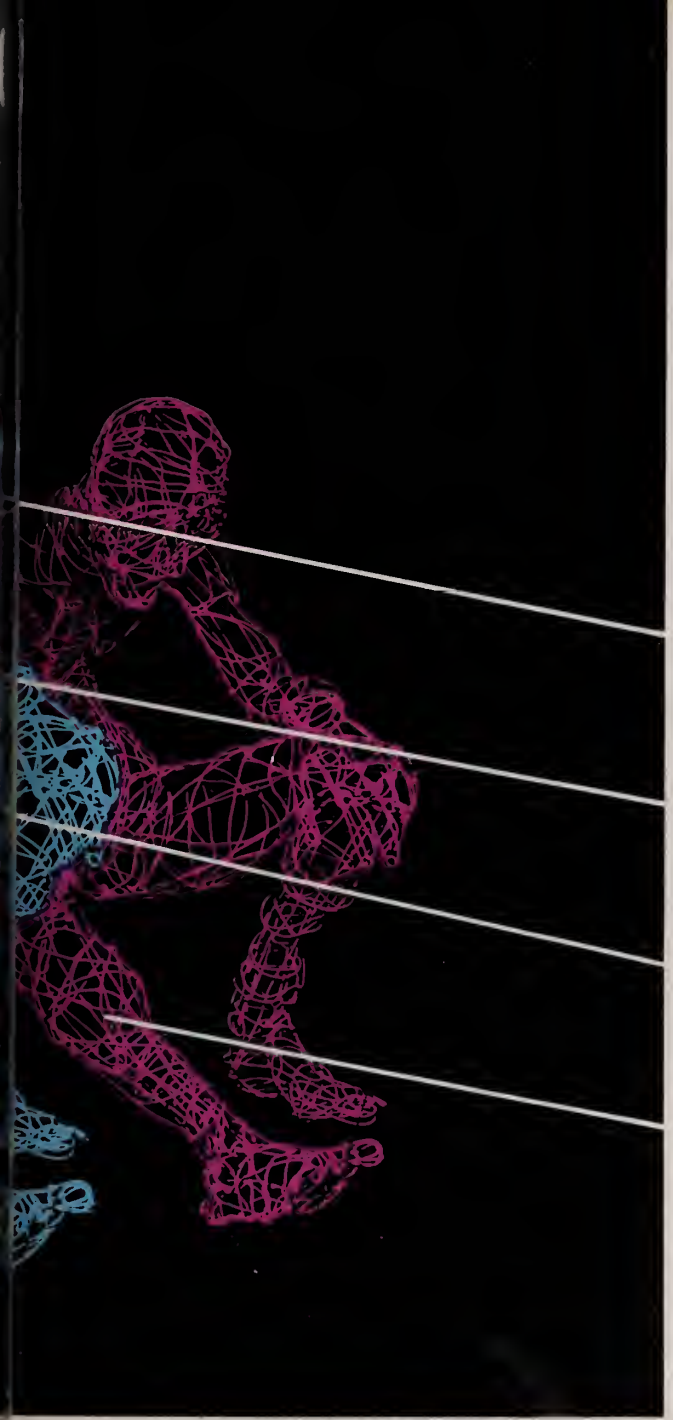
Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

Contraindications: Hemochromatosis and hemosiderosis.

Precautions: Anemia is a manifestation that requires appro investigation to determine its cause or causes.

In pernicious anemia, the use of folic acid without ade vitamin B_{12} therapy may result in hematologic remission but rological progression. Adequate doses of vitamin B_{12} (paren or oral with potent intrinsic factor as in Trinsicon® [hem concentrate with intrinsic factor, Lilly]) usually prevent, ha improve the neurological changes.

As with all preparations containing intrinsic factor, resis may develop in some cases of pernicious anemia to the pot tion of absorption of physiological doses of vitamin B_{12}. If r ance occurs, parenteral therapy, or oral therapy with so- massive doses of vitamin B_{12}, may be necessary. No single men fits all cases, and the status of the patient observ follow-up is the final criterion for adequacy of therapy. Pe



You can treat combined deficiencies with

Trinsicon®

—the multifactor hematinic

Vitamin B_{12} plus intrinsic factor (15 mcg. B_{12} activity)—helps provide adequate levels of this important vitamin.

Folic acid (1 mg.)—treats nutritional macrocytic anemias and/or malabsorption syndromes.

Ascorbic acid (75 mg.)—augments the conversion of folic acid to its active form and helps iron absorption.

Iron (110 mg.)—treats hypochromic anemia.

linical and laboratory studies are considered essential and are ecommended.

dverse Reactions: In rare instances, iron in therapeutic doses roduces gastro-intestinal reactions, such as diarrhea or consti- ation. Reducing the dose and administering it with meals will inimize these effects.

In extremely rare instances, skin rash suggesting allergy has llowed oral administration of liver-stomach material. Instances f apparent allergic sensitization have also been reported after ral administration of folic acid.

osage: One Pulvule twice a day. (Two Pulvules daily produce a tandard response in the average uncomplicated case of perni- ious anemia.)

low Supplied: Pulvules Trinsicon® (hematinic concentrate with ntrinsic factor, Lilly), in bottles of 60 and 500. [032568]

Additional information available to physicians upon request.

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Lilly

In peptic ulcer: the antacid puzzle



solved by Mylanta®

aluminum and magnesium hydroxides *plus* simethicone

"will it ease the pain?"

Mylanta helps relieve ulcer pain with the two most widely prescribed antacids: aluminum and magnesium hydroxides.

will it help "my gassy stomach"?

Mylanta *also* contains simethicone: for concomitant relief of G.I. gas distress.

"will this one taste O. K.?"

The *prolonged* acceptance of Mylanta was recently confirmed in 87.5% of 104 patients—after a total of 20,459 documented days of therapy.* *Danhof, I. E.: Report on file.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. *Dosage:* One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

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ATLAS CHEMICAL INDUSTRIES, INC.

PERIPATETICS

PATRICIA FARNES of the Laboratory of Experimental Cell Biology at the Rhode Island Hospital was Chairman of the Second Symposium of Differential Controls at the International Symposium on Haemic Cell Culture in San Juan, Puerto Rico recently. DOCTOR FARNES will edit the monograph published by the symposium.

* * *

MYRON STEIN of Providence appeared on the clinical program of the 155th annual meeting of the Vermont and New Hampshire state medical societies at Bretton Woods, N.H., on September 9. His discussion was on "The Performance and Clinical Application of Pulmonary Function Studies."

* * *

FRANCES P. CONKLIN, is the new President of the Radiologic Society of Rhode Island. CHARLES M. BROCHU will serve as Vice President. DAVID HALLMAN, the Secretary-Treasurer, will also be Councilor to the American College of Radiology's Council. At the annual meeting, ALFRED C. MOON and VEDAT ERBUG were elected to membership.

MEDICAL EXAMINERS

(Concluded from Page 536)

the attorney general in such manner and form as the attorney general may require. The director of health shall furnish books to such medical examiners for records kept by such medical examiners, and upon request of the attorney general any medical examiner is hereby directed to furnish to the attorney general transcriptions from such records, together with autopsy reports which have bearing on such records.

"23-4-22. *Accounts of fees and expenses.* — Each medical examiner shall render an account of the expenses of his views or autopsies, including his necessary fees, on the first day of January, April, July and October in each year to the attorney general, who shall examine such accounts and forward them to the state controller for payment; provided, however, that any medical examiner failing to make return of an account of expenses for any quarterly period within ten (10) days after the time specified in this section shall not be entitled to receive payment for the same.

"23-4-23. *Preservation of reports — Tabular reports.* — The director of the department of health shall cause the returns received by him for each year, in accordance with this chapter, to be bound together with an index thereto; the director of health in his capacity as ex-officio state registrar shall prepare or cause to be prepared from the said returns such tabular results as will render them of practical utility, and shall make report thereof annually in connection with the report of births, marriages and deaths required by chapter 3 of this title."

Sec. 2. This act shall become effective on January 2, 1969, and thereupon all acts and parts of acts inconsistent herewith shall stand repealed.

THEN AND NOW

- At the end of 1948, just 42 per cent of the civilian population was protected by some form of private health insurance. Today, over 82 per cent have that protection.
- Fewer than 61 million Americans had some form of hospital expense insurance in 1948. Today, an estimated 163 million people have this coverage.
- The number of persons with surgical expense insurance totaled some 34 million in 1948. Today, an estimated 150 million people are insured for surgical expenses.
- The American public's total medical care bill in 1948 was $7.5 billion. Last year that figure passed the $30 billion mark. (These amounts do not include government medical care expenditures.)
- Health insurance benefits were less than $800 million in 1948. Last year the nation received an estimate $11 billion in private health insurance benefits.

* * *

AVERAGE LIFETIME GROWING LONGER

Population growth in the United States this century has resulted more from declining death rates than rising birth rates, says the Health Insurance Institute.

Modern medicine, better nutrition and tremendous improvements in public health and hygiene have boosted life expectancy at birth from 45 years in 1900 to over 70 years today.

Today, the country has a huge net excess of births over deaths. Last year 1,852,000 persons died in the United States while 3, 533,000 were born.

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*"Now that your acne is clearing up nicely,
it might be a good idea if you started losing some weight."*

Get them while they're easily reversible.

Obesity doesn't happen suddenly. This insidious process has its beginning—and the chances of reversing it are better—during the *first 10 to 15 pounds of weight gain.* When a new dietary pattern must be established, consider the adjunctive use of BAMADEX SEQUELS. Combining the proven *anorexigenic* action of d-amphetamine with the *tranquilizing* effect of meprobamate, BAMADEX SEQUELS controls appetite throughout the day, usually with a single capsule daily.

Contraindications: Dextro-amphetamine sulfate: In hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.
Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.
Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

Bamadex® Sequels®

Dextro-Amphetamine Sulfate (15 mg.) with Meprobamate (300 mg.) Sustained Release Capsules

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Pearl River, New York

407-8

Book Review . . .

DYSLEXIA. Diagnosis and Treatment of Reading Disorders. Edited by Arthur H. Keeney and Virginia T. Keeney. The C. V. Mosby Company, Saint Louis, 1968. $12.00

In November, 1966, a two day National Conference on Dyslexia was held in Philadelphia, jointly sponsored by the American Committee on Optics and Visual Physiology and the United States Public Health Service Neurological and Sensory Disease Service Program. The American Committee is composed of elected representatives from: The American Ophthalmological Society, the Section on Ophthalmology of the American Medical Association, the American Academy of Ophthalmology, and the Association for Research in Ophthalmology.

This monograph is a record of the proceedings of this conference and was edited by Arthur H. Keeney, Chairman of the Department of Ophthalmology, Temple University School of Medicine and his wife, Virginia T. Keeney. The sponsoring agencies represent a most prestigious group and the fourteen participants in the Conference are equally outstanding professionals from a number of disciplines — ophthalmology, neuro-psychiatry, language disorders, and special education. Thus, what they have to say is important, significant, and pertinent.

To practicing physicians and to pediatricians in particular, the problems in children, of educational failure in general and reading retardation specifically, is an ever recurring concern for which parents turn to us for guidance and direction.

No one knows exactly how many school children in the United States have difficulty with reading. It has been estimated that as low as 10 per cent and as high as 25 per cent of all children at the seventh grade level are two years behind in reading skills. Reading failures are certainly higher in areas of economic deprivation and limited social and educational advantages. Even after excluding the children with IQ's below 80, there are certainly more children at the seventh grade level at Roger Williams Middle High School in South Providence who exhibit reading retardation than at Moses Brown School. And there is a considerable body of validated evidence to indicate that the IQ scores of the two groups have very little to do with the disparity in reading skills. Neither has vision. In reading DYSLEXIA one will find out that a child may have a reduction of 50 per cent of visual acuity at near distances without impairing his ability to learn to read. The reader will find out many other interesting and pertinent facts, i.e., 1) It is possible very accurately to identify kindergarten children who will fail in reading three years later by some simple rapid screening tests; the IQ is one of the least valuable predictors of reading success or failure; and the way a kindergarten child holds a pencil is one of the most accurate prognosticators of reading success or failure three years later. 2) Failing readers show significant evidences of "immaturity" in many related areas: auditory discrimination, time and space concepts, visual motor skills, and behavioral styles. This immaturity may extend to such specific items as carpal development and skeletal growth. This is, of course, nothing new. For years, sensitive teachers have recognized the syndrome of Delayed Educational Maturation or what is idiomatically referred to as the "Late Bloomer."

For the practicing physician the evaluation of the various etiologic factors responsible for reading failure become increasingly meaningful when these factors can be related to specific areas of remediation and retraining. Thus in the chapter "Early Predictions of Reading Disability," deHirsch and Jansky state: "Teaching should not be method centered but child centered. The youngster who does well in both auditory and visual perception will learn from any method offered him. The one who does poorly in both will need heavy reinforcement and the activation of as many pathways as possible. The poor visualizer needs phonics."

It becomes increasingly difficult in reviewing this well written and well edited monograph to refrain from inserting pertinent quotations.

In discussing the "clumsy child" whose poor motor skills are by some practitioners presumed to be related to poor reading skills, MacDonald Critchley says, "This (the clumsy child) is a very deceptive evaluation, except for those who are highly experienced in developmental pediatric neurology. The term clumsy child has no precise meaning to a neurologist. Clumsiness may entail a number of physiologic deficits: cerebellar, proprioceptive, pyramidal, extra-pyramidal, or even dyspractic. These deficits are quite different, and it takes an expert to distinguish them. No non-medical observer should stumble into this trap. . . . Furthermore, all children are awkward at certain activities at certain ages, and only gradually do they achieve dexterity or manual skills."

At a time when there is a growing enthusiasm, not well documented, for helping slow readers by attempting to improve their motor skills, this observation by a respected authority is worth noting.

While there is much to be learned about why

(Continued on Page 541)



the spasm reactors your practice deserve

"the Donnatal® Effect"

	each tablet, capsule or 5 cc. of elixir (23% alcohol)	each Donnatal No. 2	each Extentab®
yamine sulfate	0.1037 mg.	0.1037 mg.	0.3111 mg.
ine sulfate	0.0194 mg.	0.0194 mg.	0.0582 mg.
ine hydrobromide	0.0065 mg.	0.0065 mg.	0.0195 mg.
barbital	(¼ gr.) 16.2 mg.	(½ gr.) 32.4 mg.	(¾ gr.) 48.6 mg.

ning: may be habit forming)

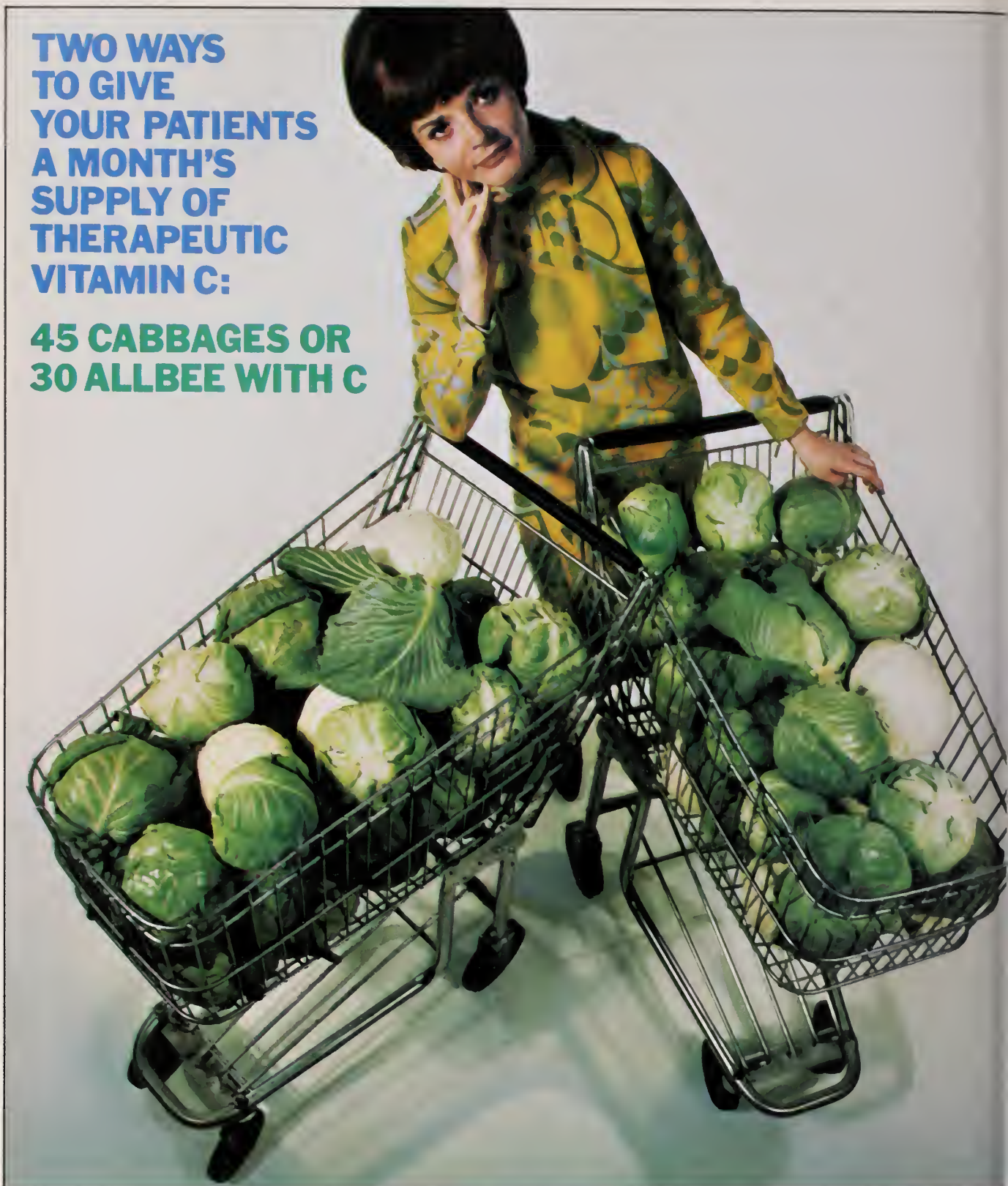
A. H. ROBINS COMPANY, RICHMOND, VIRGINIA 23220

Brief summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

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Balanced Retirement Program of the Council of the New England State Medical Societies

On January 1st every *self-employed* physician became eligible to deduct $2,500 *before* taxes from his 1968 income. A physician, therefore, in the 32 per cent tax bracket could save as much as $800 in taxes yearly. With the proposal for increased tax rates, both Federal and State, this saving would be further enhanced. In 20 years this would add up to $20,000.

The newly-doubled Keogh deduction, a key element in the New England State Medical Societies Balanced Retirement Program, re-inforces the Plan's two fundamentals: a mixture of guaranteed dollars for stability and equity investment for growth, plus maximum "flexibility," which makes the Plan individually workable.

The components in this Plan are a unique "Stop-Go Variable Deposit" Flexible Retirement Annuity underwritten by The New England Mutual Life Insurance Company, and the Beacon Investing Corp., a no-load mutual fund, having Standard & Poor as the Investment Advisor. Beacon's shares are offered only through the Prospectus, a copy of which can be obtained by writing James Andrew, 507 Turk's Head Bldg., Providence, R.I. 02903. The utilization of these features allows for a complete tax deduction within the Keogh Plan, and it is only these features that are recommended for Keogh usage.

To complement your Keogh Plan there is a special optional one-year term policy to provide a Death Benefit. In the event that you become disabled, there is a special group non-cancellable (It means just that. The physician's individual coverage can never be cancelled) provision, and guaranteed renewable — the premiums can never be raised — disability coverage which guarantees that your retirement deposits will continue in the event you become disabled. Coverage is limited to $200 per month and is available on a non-medical basis up to and including age 49.

All payments to this Program are directed through The National Shawmut Bank of Boston which also serves as the Custodian and Transfer Agent for the Beacon Fund, and serves as Trustee for your Keogh affiliation through The New England State Medical Societies Master Trust, as approved by the Internal Revenue Service.

Mr. William D. Brownlie, Servicing Administrator for the Plan, cautions each physician to keep in mind that because of the special tax treatment afforded Keogh Plans, it must be classified as a Pension or Profit-Sharing Plan — not an Investment Plan. By that he means it is subject to income tax when received in retirement years — and at ordinary income tax rates then in effect at that time. Also, in the event of death, it is includible in your estate for estate tax purposes, and is subject to income tax as received by your beneficiary.

It is because of these factors that Mr. Brownlie urges physicians to consider very strongly that no one avenue or approach is necessarily the ideal solution in creating a Keogh Plan. The Plan should have an ability to provide income, either fixed or variable (available through the Variable Annuity Concept) for a two-fold purpose: to spread the Keogh Tax, as it becomes due, over your life expectancy; and to provide income for as long as you live, which is really what Pension Planning is all about.

There are numerous other built-in features of this Plan, which, according to Mr. Brownlie, create one of the highest degrees of flexibility for the physician to be found anywhere in the United States. For further information on the N.E. State Medical Societies Balanced Retirement Program, write to Mr. Brownlie, 10 Post Office Square, Boston, Mass. 02109.

BOOK REVIEW

(Concluded from Page 540)

children of normal intelligence fail to learn to read, there is still a great deal that doctors and educators do know about the early identification of potential failing readers and their educational management. The tragedy is that what we do know is not more generally applied. Physicians, both as individual citizens of their communities and through the respective committees of their medical societies, have a responsibility in this area. This monograph and its excellent bibliography is a much needed resource for all doctors interested in the welfare of children.

In "South Pacific" the young naval lieutenant sings about racial prejudice. The words are equally applicable to Dyslexia:

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THE POPULATION EXPLOSION*

World Population Destined to Outstrip Food Resources Unless Restrained.

JOHN ROCK, M.D., *Director, Rock Reproductive Clinic, Boston, Massachusetts.*

The subject that was assigned to me was "The Population Explosion." I am sure you have heard people question the aptness of that term; but I hope to show you that it accurately defines our problem. Let me quote just a few figures that are, doubtless, familiar to you, but that convinced me. Malthus forewarned us of them almost two hundred years ago.

RUINOUS GROWTH IN NUMBERS

Philip Hauser, the eminent sociologist, neatly depicts man's ruinous growth in numbers. Notwithstanding the many preceding millennia, it was not until 1825 years after Christ that the human population had reached one billion; but the second billion came in only slightly more than one hundred years. We were three billion after only thirty more years. That was in 1960. At our present rate of growth, it is expected that we will have come, in only twenty years, i.e., around 1977, to the fourth billion; and, if current rates of population growth persist, the fifth billion will be reached after only ten more years; the sixth will require but eight years; and, if still at the present rate, we will be seven and one-half billion only five years thereafter.

This is the geometrical progression referred to by Malthus. I think it is quite impressive, when you consider that every single unit in all of these billions starts with what the confused little girl asked her mummy about:

"Do you and daddy have sexual relations?"

And mummy said: "Yes, dear, that is how we get to be mummies and daddies."

And the little girl said: "Then how come I never met any of them?"

Malthus also related population growth to the ability of mankind to feed itself; and it has been stated many times that, unless something were done about the numbers being populated, eventually there wouldn't be food enough.

Pope Paul, in his Christmas message of 1963, said: "Hunger can become a subversive force with incalculable results."

Karl Sax, Harvard Professor of Botany, Emeritus, sometime ago pointed out that, in the Lord's Prayer, we ask for "our daily bread" before we ask for forgiveness of sins. Apparently, even in the old days, there was apprehension of lack of food.

LIMITATIONS OF MODERN TECHNIQUES

Of course, there are those who would say that today we don't have to worry because modern techniques will take care of everybody. Man, of course, can produce a great deal more than he does; and those whom I have called star-gazers and blind optimists think that something will turn up to triple the world supply of food, thus to avoid a famine. There could come synthetic foods, made of nitrogen from the air and hydrocarbons from plants and from oil; and of course there is always fish. Megatons of fish theoretically, could be extracted from the sea, and we know that whales live on plankton, consisting largely of microscopic organisms that abound in the ocean. There have been trials of packaging these in little cakes. I have never tasted any; but this is a possibility. Also, there is other fish food to be made available. I read in the Boston Herald Traveler only a few days ago that a fish-flour factory is operating in New Bedford; but I was told tonight that a pound of ordinary flour costs about twenty cents, whereas this fish flour would cost forty-two cents. I doubt that in Africa and India it would help very much. Then, we hear about hydroponic food, grown without soil.

It is proposed to increase the supply of fertilizers so that all the land that isn't productive may be made so. Lester Brown, of our own Department of Agriculture, has estimated that to feed the people in India today the production of food would have to be three times the amount presently available. This would require all the fertilizer now used in the world.

(Continued on next page)

*A transcript of remarks made at the 157th Scientific Assembly of the Rhode Island Medical Society on May 7, 1968.

SOUTH AMERICA

Let us also consider South America where there is a frightening rate of population growth. Ah, 'tis said, there is also a great deal of land that isn't being used. The jungles are vast, and it does seem that obviously these areas could supply the needs. The mighty trees in the jungles grow almost overnight; but what happens when they are cut down? The sun comes in and one finds that the soil underneath has been laked of all the nourishment, leaving nothing but hard clay. This, too, would require all the fertilizer in the world. There is plenty of land on our planet; but land alone can't supply what we want.

Of course, too, there is the institution of land-tenure reforms. The tenant farmers haven't the incentives of the individual owners. So what we ought to have is farm ownership. That is all very well for a society that is geared to it; but for others, a great and unavoidably slow change in attitudes would be required. The Russians have tried socialistic controls and failed. Capitalistic initiative would help; but there isn't any available capital in those countries south of us.

Needless to say, improved seeds would increase the size and quality of crops. This, also, would take time. There is, moreover, the illiteracy problem, to hamper modernization of farming methods. During all these years that will be required to implement all the plans of increasing agricultural products, which theoretically can be done, man continues to reproduce. Hence there is very good evidence that, in something like ten years, we are going to face one of the worst famines, perhaps the worst tragedies, this world has ever seen.

FAMILIES MUST BE LIMITED

We must all accept, now, the principle that families must be limited. We must restrict our births, now; and we must continue to limit them, in order to prevent a second famine which, it is estimated, would afflict us around 2010; that isn't very far in the future.

There are two ways, it is said, to get to the top of an oak tree; one is to sit on an acorn and wait; and the other one is to climb. We should climb. I feel that we must not only think of these things abstrusely; we must act. This applies to the United States, just as much as it does to the so-called underdeveloped countries.

Roger Revelle, Director of the Center for Population Studies at Harvard, made what was called a Harvard Epigram in 1965, when he said:

"I just don't believe that our western society can maintain itself as a beleaguered citadel of opulence in a world of poverty."

Let us not be too complacent. Let me call your attention to the confrontation of the big, fat, wholesome, healthy Gilbert K. Chesterton and the little, skinny Bernard Shaw. When Chesterton said to Shaw: "Why, you look like a famine," Shaw retorted: "Yeah; you look as if you caused it!"

Famine threatens much of South America which, at the same time, is bursting with rising expectations. For us to avoid an accusation like Shaw's, restrictions must apply to every fertile couple in the United States, regardless of individual family resources, such as enjoyed by those who can have and support many children and and send them to school and buy them bicycles, automobiles, even aeroplanes.

Now I don't mean that accidents will not happen, so that one must blame the parents if they have an extra child. But the over-all effect of sizable families must be kept in mind just the same.

THE UNITED STATES

We are now 200 million people. The Census Bureau estimates that by 2010, a little over forty years from now, if we continue to grow as of now, we will be 400 million people; and our food surplus is gone.

You may have seen a book written by the Paddock brothers. It is called "Famine — 1975!" If you have not read it, I hope you will get it and read it this summer. One of these men had been in the State Department for many years, and the other is a distingushed agronomist. In the early part of the book, they say this:

"A locomotive is roaring full throttle down the track. Just around the bend an impenetrable mudslide has oozed across the track. There it lies, inert, static, deadly. Nothing can stop the locomotive in time. Collision is inevitable. Catastrophe is foredoomed. Miles back up the track the locomotive could have been warned and stopped. Years ago the mud-soaked hill could have been shored up to forestall the landslide. Now it is too late.

"The locomotive roaring straight at us is the population explosion. The unmovable landslide across the tracks is the stagnant production of food in the undeveloped nations, the nations where the population increases are greatest."

And then they go on to say: "The collision is inevitable. The famines are inevitable."

Already the world food supply is inadequate to feed the existing multitudes, much less to raise the standards of living. It is estimated that 60 per cent of the world's population is protein-deficient. This sadly interferes with efficiency of the cerebral cortex. Later on, we are going to have an increased problem with human beings of impaired mentality.

Today 15 per cent of Mexicans are hungry; and 50 per cent of the deaths of children, ages 1 to 4, are due to malnutrition.

The Mexican population doubles every fifteen years.

INDIA

In India there are more than half a billion people now. Some three years ago Madame Nehru, the wife of the Indian Ambassador, said to me: "You know, the population in India increases 10 million every year." The growth rate now is 13 million per year. The famine has already started in India; in some areas, it is well under way.

About 80 per cent of East Indians are illiterate. Think of that, when considering improvement of agricultural methods.

Last December there was an item in the Boston Herald Traveler which said that, in the past, we have sent to India 3.6 billion bushels of surplus food; its people now consume 25 per cent of the wheat grown in this country.

The world-wide demand for food mounts every year, and our supply is not limitless. The United States in 1954 had 903 million bushels of wheat and 918 million bushels of corn in storage, and it cost 576 million dollars to store it. Now, the general attitude is that it is humanitarian to give away the food, and good for us to save that money. Well, we gave the food away. There is no surplus now in the United States. It is estimated that we have only a six-year supply for our own safety.

INEVITABLE FAMINE

The Paddock brothers, who tell of the inevitable famine, and of whom I have spoken, had a plan for distributing what relief we may be able to give. They leaned on the triad applied by harassed battalion surgeons who, in active fighting, first receive the wounded. They carefully appraise each casualty and note the ones who can't be saved. They can spend no more time on them. Then, they check the ones who could save themselves. They pass them on. Finally, they give their limited attention to those who can be saved only with help. This is the proposal that is made for the distribution of world surplus supplies: that we have to consider the economic and social conditions of the people, not their immediate needs. If they can be saved with help, all right; give it to them. If they can, by chance, save themselves, all right; encourage them to do so. But, as is the case in large parts of underdeveloped areas, if conditions are so bad they can't be saved, we can only pray for them.

The United Nations in 1957, eleven years ago, said that food and population were increasing *pari passu.* But in 1966, two years ago, there was no increase in agricultural products; yet the world population was up seventy million.

"The world food situation is now more precarious than at any time since the period of acute shortage immediately after the Second World War," the United Nations reported.

WORLD CALAMITY

The noted Swedish economist, Gunnar Myrdal, sees a "world calamity" in "five or ten years."

Chester Bowles, our Ambassador to India, warned that the approaching world famine threatens to be "the most colossal catastrophe in history."

Doctor Raymond Ewell, chemist and economist, said:

"The world is on the threshold of the biggest famine in history. If present trends continue, it seems likely that famine will reach serious proportions in India, Pakistan and China in the early 1970's . . . Such a famine will be of massive proportions affecting hundreds of millions."

A Chinese proverb, that Karl Sax called attention to, is as follows: "It is difficult to tell the difference between right and wrong, but when the stomach is empty, anything can happen."

I remind you again that Pope Paul said: "Hunger can become a subversive force. . . ."

We must be able to resist this subversive force of hunger. We, in the United States, must be able to save what is left of and for the undeveloped countries while, at the same time, we must safeguard our own culture.

Fortunately, today, we don't have to fight the battle over birth control. Throughout the civilized world the battle of the minds of intelligent people on that particular issue, I think, has been won. Winning acceptance, I believe, is but the first step. We must apply it, if our society is going to maintain its integrity.

UNIVERSALITY OF MONOGAMY

What is meant by "integrity" of the society?

Integrity is an unimpaired condition; and we would like to feel that our society couldn't possibly disintegrate, and that it will maintain its definite and recognizable stability. This stability, I will tell you, rests ultimately on the individual; and this depends on the integrity of the individual family; and this, on monogamy. Monogamy is universal throughout the world; it is the characteristic unit of society, which is found not only in cultures of today, but, the anthropologists teach us, in every known culture; it is easily recognizable, the essence of monogamy: one man, one woman, and their children.

The universality of this grouping, I believe, attests to its biological origin. This is not a planned thing: it grew out of man's genes.

I believe this "pair-bond" arises not in man's cortex, but in man's inherent sex instinct, characteristically suffused as it is with enduring love of mate. We don't find this in any other animal. By full response to his humanly embellished mammalian instincts, mankind through the ages has maintained the monogamous family pattern.

(Continued on next page)

Within this design, up to the present time, man has perpetuated his peculiar and spirited species. There now appear grave reasons to fear that, in the near future, this will not remain possible, unless he manifests the wisdom that justifies for his species the characterization of *Homo sapiens*. Easily, as he has well demonstrated, he can continue to propagate, but can he surely continue to reproduce healthy, rational, adult human beings?

Our species is unique among all animals. It, only, is endowed with intellectuality. Our properly fed animal bodies grow, and in mating we procreate automatically; but we utterly require education and correctly supervised experience and guided apperception: we require, as we grow through childhood and adolescence, correlation of our day-to-day experiences with the acquired knowledge of our forebears, in order to insure the perpetuation of our species. Thus, parents themselves must have knowledge and must make certain its transmission to their offspring.

So intricate and complex have become the interpersonal relationships of our species, that parents, together with their surrogates and other teachers, can discharge the inescapable duties of parenthood only if the number of offspring, within each family — as also within the whole group of families — is limited to parental and institutional capabilities.

BIRTH CONTROL

I have already said that birth control is an accepted family practice, at least in our country.

Hence the question comes up as to just what method of birth control will best conform with man's sexuality which, we know, is biologically meant to preserve our species.

I think, like me, you learned quite accurately that the so-called "instincts," hunger and fear, function for the welfare of the individual. The sex instinct doesn't primarily pertain to the individual at all; as John Money has said, it is merely loaned to him for the benefit of the species. This is equally so with the other animals. But, to insure durability of parental love and care of offspring, our sex instinct became entwined with our whole affective nature. It is embodied in interpersonal love.

I think that this is why we have the monogamous family, which most of the notable sociologists agree is the characteristic structural unit in all known human societies, past and present. It can be considered as the naturally evolved biological result of the humanly peculiar long-term love of mates for each other, together with the long-term loving interest in children. It is mankind's uniform means to insure the prolonged educational good parenthood so necessary for reproduction of healthy, rational adults. Right-thinking societies make certain that the monogamous family is not jeopardized by more children than can be properly reared to useful adulthood.

The imminent danger of this was recognized by the Japanese when MacArthur was there. They knew better than to extend the practice of infanticide, which was still prevalent to some extent, not only in Japan but elsewhere as well. You are undoubtedly aware of the fact that the method which Japan did use to stabilize its population, and very successfully, in only ten years, was abortion.

Lately there has arisen widespread objection to our archaic laws against abortion throughout the country. I would say nothing more about it except to repeat what, more or less, was the suggestion of your President, Doctor Stanley Davies, in his annual address that it would be well if the lawyers and politicians would leave medical problems, of which the propriety of abortion is one, to the doctors. Their moral and medical judgment is to be trusted more than the prejudice of sectarians.

Chief Justice Rugg, in Massachusetts, sometime in the late teens, ruled that the abortion restrictions in the laws of Massachusetts were never intended to interfere with good medical practice; and good medical practice, we know, takes care of not only the individual woman, but of the family and the children.

The business of revering parentage — this general attitude of crediting people with being only parents — I think is all wrong, because parents and parentage supply only the raw material out of which good parenthood can be expressed. Only this can preserve our uniquely human spirituality.

UNITED NATIONS STUDIES

Extensive and detailed studies of how best to limit family size in India were made under the auspices of the United Nations. The commission concluded that, if the age of marriage were raised, this would take care of something like 10 per cent of the annual population growth. While it is true that some teen-agers are not as fertile as most young adults, nevertheless raising the age of marriage is one way of cultural attack. We should try the same method. Our age of marriage is going up a little. When we get it up to twenty-one, let us say, the future of our children will be less precarious.

In India sterilization of men who already have two healthy sons is gaining acceptance. Of course, in our country, we still hang on to a reverence for sperm and semen. As a matter of fact, as you know, spermatozoa are not even human cells, and are destroyed by nature in huge numbers. They are but desquamated cells; and they are continually thrown off from the time the little boy starts making them at age twelve to fourteen. They escape in the urine as of no use. Of course, sometimes they are naturally ejaculated, *en masse*, and even though they

are but rarely valuable to nature, somehow or other, in the old days, the sperm cells were accorded sanctity. Unfortunately, this feeling about them still persists in the minds of many.

STERILIZATION

There is widespread misconception of the vast difference between sterilization and castration. Sterilization means an interruption of the path by which germ cells can get together. It has nothing whatever to do with the hormones, which make a man potent and a woman responsive. When I say these cells get together, I am reminded of the question once asked me by a medical student: "What is the best method of contraception?"

I immediately thought of the dilemma of the school teacher who, after teaching the same stuff of physics for forty years, was told to modernize her course or accept retirement. She was distressed, so she went to the superintendent of the electric light company, and she asked:

"Will you please tell me what is today the best insulator?"

And he replied: "Madam, the best insulator today is the same as it was forty years ago: about fifteen feet of fresh air."

During the late 1950's, it was estimated that some 45,000 American husbands and 65,000 American wives willingly had recourse to sterilization; and the number, I can promise you, has steadily increased. In India, during the seven years preceding 1964, this method was chosen by 250,000 men and 150,000 women. The United Nations commission believed that popularization of this procedure would reduce India's growth rate an additional 10 per cent.

THE "PILL"

Of course, there are other methods: we must not forget the old ones; but I need not speak of those that were common quite a while ago. I feel, though, that I should mention that one which is commonly called the "pill." Well, the "pill" is merely an imitator of nature. The action of the "pill" on the ovaries is almost exactly the same as that of the woman's own hormones after one egg has been released in an ordinary menstrual cycle. The "pill," like these hormones, prevents the emergence of another egg until the preceding egg has been taken care of. The hormones which the female body produces suppress further ovulation in the interests of that particular egg. When that egg is not fertilized or when it combines with a male germ cell and eventuates in an infant, then the hormones are withdrawn and a succeeding ovulation occurs in due time.

If a baby results, the mother uses her brain. She picks up the child and she, or her sister or cousin or aunt, puts it to the breast. Again there is a built-in suppresson of ovulation while lactation is full: while the infant really suckles strongly; and her hormones permit no further ovulation.

However, when the woman has two or three children already, and she knows her resources cannot do justice to another baby, is she not expected likewise to express her mentality and prevent further conception?

It seems to me that the use of the hormones involved in the "pill" constitutes the one *natural* method of birth control, and that the use of the term for any other method is invalid.

Although one or another pharmaceutical preparation of the "pill" can serve the purpose of most women, a small proportion, for one reason or another, find it unsatisfactory. Some of them prefer a monthly intramuscular injection of a contraceptive steroidal preparation. Those available at present can be as effective for suppression of ovulation as are the oral forms, since their mode of action is quite the same. The dosage and timing must be adjusted to the individual, and even then may not establish as fixed a periodicity of menstruation as does the "pill." The inconvenience of office visits and the local discomfort of injected material are apparently of minimal concern to those for whom the "pill" is unacceptable or inappropriate.

INTRAUTERINE DEVICES

Then, too, there are the plastic intrauterine devices (the IUD): the loop, the coil, and the bow. They are easily inserted by the competent physician through most cervices by means of a plastic tube within which they straighten out, only to resume their manufactured shape when released in the uterus by withdrawal of the cannula. The appropriate form and its size depend on the size of the fundal cavity and particularly on the calibre and tonicity of the internal cervical os. Their mode of action remains obscure. I rather think that, in the preponderance of cases, they are promptly abortifacient rather than contraceptive. They are well tolerated by most women, though occasional mild cramps and intermittent spotting are not infrequent disadvantages. Their great advantages are the singleness of decision for birth control and their usual tolerability and innocuousness, as well as their noninterference with menstrual function. They do, however, require constant watchfulness on the part of the woman and, periodically, of the physician, for too frequently the uterus expels them. It is of interest that one form of an IUD was devised by an able gynecologist named Zipper.

NEED AND URGENCY ARE GREAT

Although we have these various good methods of family limitation, the need and urgency of restriction are so great that other, even more generally acceptable means, are required. Research into finer details of reproductive physiology and how harmlessly to harness it is urgently needed.

(Concluded on Page 551)

THE MENOPAUSE*

Estrogen Therapy in Menopause Can Assure Healthier, Happier, More Vigorous and More Contented Life

JOHN W. WALSH, M.D., *of Washington, D.C., Clinical Professor of Obstetrics and Gynecology, Georgetown University Medical School, Washington, D. C.*

In this presentation I shall review briefly the menopause, its manifestations, and its management. I shall not describe a new or better methodology, but rather will outline my own concepts as well as the views of those who have contributed importantly to the literature through clinical and experimental research.

HISTORICAL BACKGROUND

If I may go back in time and present an historical concept of sex endocrinology we shall better appreciate that only in recent years has the need arisen and has adequate therapy been developed to treat the menopause.

The analogy between the testis and ovary was recognized by early anatomists who even as late as 1555 referred to the ovary as the female testis. The ovaries were in a better protected location than the testes, and the effects of castration were not recognized until 1750. Another hundred years elapsed before the relationship between the ovaries, the female sexual organs, and the secondary sex characteristics were discovered.

Toward the end of the nineteenth century ovarian transplants were found to relieve, albeit temporarily, the symptoms of castration. Dessicated ovarian preparations enjoyed considerable popularity until the Council on Pharmacy and Chemistry of the A.M.A. declared that dessicated ovarian preparations were ineffective in the treatment of ovarian deficiency states.

In 1923 Allen and Doisy demonstrated that follicular fluid contained estrogenic substance. In 1929 Doisy, Veler, Thayer and Butenandt obtained a crystalline estrogen from human pregnancy urine. It was named theelin or also called estrone. A year or so later, another estrogen was recovered called theelol or estriol. In 1932 and 1935 Schwenk and Hildebrandt prepared a new potent estrogen, and in 1935 MacCorquodale, Thayer, and Doisy independently extracted this same estrogen from follicle fluid. It was shown that alpha-estradiol is the pure follicular hormone and that estrone and estriol are its excretion products. Since that time numerous natural as well as synthetic hormone preparations have been standardized for use in clinical practice.

NATURE OF MENOPAUSE

Historically little recognition had been given to the menopause until recent years. At the time of Christ, life expectancy was less than 25 years. By the fourteenth century it has increased to a bit more than 30 years, and by the turn of the last century it was about 48 years. It is only since then that life expectancy of women has increased to about 75 years. This probably stems from better nutrition, housing, and medical care. However, as a result of increased longevity a myriad of new problems has been born, and these are a result of the menopause.

The menopause may be defined as a series of events manifested by failure of ovulation, gradual alteration of the menstrual pattern, inability to conceive, and finally cessation of the menstrual function. Women are unique in the animal world. They now have a life expectancy of about 24 years or more following cessation of ability to breed. Most lower animals barely outlive their ability to conceive and deliver viable offspring.

Among the symptoms which may be present during this period of a woman's life are hot flushes, nervousness, insomnia, dizzyness, palpitation, paresthesias, emotional instability, and irritability. These individuals manifest irregularities of menstruation varying from scanty menses to flooding, and decreased vaginal secretions leading to dyspareunia. Some individuals lose a sense of personal hygiene and thus become less attractive as sexual partners for their husbands. These situations can lead to self-depreciation, jealousies, frustrations, suspicions, and loss of understanding in the home with truly unfortunate problems which need not arise.

The climacteric is characterized by a gradual loss of ovarian function and its associated endocrine changes. The essential changes are represented by estrogen deficiency coupled with increased pituitary gonadotrophin secretion. In the beginning estrogen deficiency may be relatively little, but gradually declines to a low level in the postmenopausal state

*Presented at the 157th Annual Scientific Assembly of the Rhode Island Medical Society, at Providence, R.I., May 8, 1968.

at which level it remains fairly stable. Inasmuch as some estrogen secretion continues even after oophorectomy the adrenal cortex is considered to be the source. Anterior pituitary secretion of follicle stimulating hormore (FSH) and luteinizing hormone (LH) is found to be high in the postmenopausal years. These high levels of secretion can be decreased with administration of therapeutic quantities of estrogens. In later years as women approach 70 years there is a decline in the secretions of gonadotrophins. The secretion of 17-ketosteroids remains fairly constant, although there is a steady decline in secretion of 17-hydroycorticosteroids. There seems to be in many women a clinical decrease of thyroid function, although this may not be borne out by laboratory studies, and in some hyperthyroidism may occur.

Hot flushes are caused by sudden dilation of arterioles with resultant flushing of the skin, mainly in blush areas, with subsequent heat loss, usually followed by sweating. They may be precipitated by exercise, emotional excitement, eating, and over-heating of the body. It is not clear whether they are cause by low estrogen, high gonadotrophins or a combination of both. Some workers have attributed the flushes to lowered LH secretion from the pituitary, althought others have reported increased LH secretion.

The menopause generally lasts an average of about two years or more during which time considerable physiologic and psychologic changes occur. After surgical castration menopausal symptoms will occur more abruptly than in individuals in whom the ovaries remain intact. When hysterectomy is performed in younger women for benign lesions, preservation of the ovaries is recommended. However when the uterus is removed in the menopausal or postmenopausal patient routine ovariectomy is best carried out, because of the possibility of malignancy occurring after the age of 65 in relatively functionless organs. Emil Novak estimated that between 10 and 15 per cent of women in this age group consult physicians because of menopausal symptoms.

BODILY CHANGES

In general it may be said that after the menopause body cellular changes are for the most part regressive. Body weight usually increases from young womanhood till age 65, then remains fairly constant, and after 80 usually decreases. The skin becomes thin and dry, and loses elasticity, and spotty pigmentation occurs. Fat is redistributed into the girdle area resulting in "middle-aged-spread." Wounds heal slowly. Fatty infiltration occurs into many tissues and organs. Muscles lose tone and become flaccid, and connective tissue loses its elasticity.

Osteoporosis is one of the most common afflictions of the menopause. This condition occurs more frequently in women than in men in comparable age groups and affects approximately 25 per cent of postmenopausal women. Progressive atrophy or thinning of the bony cortex and trabeculae occurs leading to diminished bone structure. Relatively atraumatic fractures occur in the hip, wrist, and shoulder. Absorption of bone in vertebral bodies is common with resultant expansion of the intervertebral discs and collapse and wedging of one or more vertebral bodies. This can produce severe sharp back pain and muscle spasm. This leads to humpback posture and loss of height of one to several inches. Serum calcium is normal, as is alkaline phosphatase, but serum phosphorus tends to be slightly elevated. A factor which must be considered in the etiology of osteoporosis in the middle-aged woman is her decreased activity which reduces the stimulus to bone formation. Thus the disproportion between bone resorption and decreased formation leads to decreased bone mass.

Menopausal patients may be spared the long-range effects of osteoporosis by suitable estrogen replacement. Studies by Wallach and Henneman have shown lack of osteoporosis in women treated with hormone replacement for severe menopausal symptoms. They recommend cyclic treatment using conjugated equine estrogens (Premarin®) in doses of 1.25 mg., gradually increasing to 5 mg. daily for 4 weeks followed by one week's rest. Menstruation can occur during the withdrawal period. Prolonged bleeding or that occuring during treatment can be relieved with progestogens in the form of Provera® 10 mg. daily for five days or by giving Delalutin® or Deproprovera® intramuscularly, either of which will produce desquamation of the endometrium. No evidence is at hand to suggest that androgens have any anabolic effect at this time.

PELVIC ORGANS

Pelvic organs during and after the menopause undergo considerable regressive changes. There is notable disappearance of fat from the labia until they almost disappear. The skin of the labial folds become thin and atrophic resulting in sensitivity to urine soilage. Fissuring is common, and shrinkage can occur resulting in actual kraurosis of the vulva with constriction of the introitus. The vaginal mucous membrane, a very sensitive mirror of estrogen level, becomes smooth and thin, and loses its rugae. The vagina can become the source of mixed bacterial infection because of lowered resistance with resultant irritation of the labia. The vagina itself can also shrink and lose its elasticity and in so doing cause shortening and elevation of the urethra with caruncle formation. The cervix and uterine body become smaller due to actual

(Continued on next page)

shrinkage and the tubes and ovaries atrophic. The endometrium becomes quite thin, the glands decrease in size and quantity showing lack of secretion, and the stroma becomes compact. Existing fibroid tumors decrease in size and may actually but rarely disappear. Vaginal smears reflect well the estrogen level. The maturation index, the relationship between the para-basal, intermediate, and superficial cells, will give information as to the patient's estrogen level. A good estrogen level will cause a shift to the right.

As our female population grows older there is increased risk of malignant changes occurring in the pelvic viscera. In the post menopausal patient vaginal bleeding, watery discharge, pelvic pain, or pelvic mass demands immediate investigation. Routine pelvic examination including cytologic study should be performed at regular six month intervals. In this fashion early and curable malignancies of the cervix may be discovered. Papanicolaou smears are successful in detecting endometrial carcinomas in only some 84 per cent of cases. The patient who is bleeding or is having a watery discharge demands immediate curettage and cervical cone or wedge biopsy. Benign causes of postmenopausal bleeding may also be found, such as cervical or endometrial polypi, or more rarely sub-mucous fibroids. Postmenopausal endometrial hyperplasia, in the absence of estrogen therapy, should make one suspect a possible feminizing ovarian tumor. Granulosa-theca cell tumors may also be associated with carcinoma of the endometrium. Another problem to reckon with is the fact that women who tend to menstruate well into the fifties will show an increased incidence of endometrial cancer. This is especially true of those who have had to undergo repeated curettages because of endometrial hyperplasia.

Post menopausal bleeding may also be caused by petechial hemorrhages associated with senile vaginal changes. Vaginal smears may occasionally be reported as Class 3. A quick reversal to Class 1 may be accomplished with the use of an estrogenic vaginal cream, which can produce rapid cornification of the vaginal mucosa.

In earlier years the incidence of cervical carcinoma as compared with endometrial carcinoma had been reported as 8:1. More recently the relative frequency of the two diseases has ranged from 5:1 to 3:1, and in one series as low as 1.2:1.

ATHEROSCLEROSIS

During the aging process atherosclerotic changes occur in both males and females. However, it has been established statistically that in the age group of 30-39 years the incidence of coronary artery disease in males as compared to females is 20:1, in the 40-49 year age group 3:1, and in the 50-59 year age group only 2:1. This emphasizes the increasing incidence of coronary artery disease in women as their estrogen secretion wanes. Experimental studies strongly suggest that estrogens are responsible for protecting women from coronary heart disease. In castrated women the incidence of angina pectoris and myocardial infarction is considerably higher than in women of comparable age with intact ovaries. Autopsy material indicates that castrated women have a 10-45 per cent greater occurrence of severe atherosclerosis than those of comparable age having ovaries. The findings relative to the incidence of cerebral and peripheral artery disease are similar. All patients with atherosclerotic heart disease exhibit a hypercholesterolemia and a decrease in serum phospholipids. Estrogens given therapeutically can bring about a reversal in the cholesterol/phospholipid ratio. Estrogens should have a place in the treatment of atherosclerotic disease in women, especially in those with hypercholesterolemia, obesity, hypertension, and those with a history of heavy smoking. Estrogen administration has been reported effective in lowering the blood pressure in menopausal hypertensive patients, whether in surgical or naturally occurring menopause.

PSYCHOLOGICAL CHANGES

Psychological problems of the menopausal and postmenopausal woman may be only in part related to diminished estrogen. These women suddenly or slowly realize that they cannot conceive or bear children and must assume a different role in the home and in society. With some, this transition can be represented as a real crisis which "threatens, sobers, and frightens." Then they may fear their adequacy, loss of physical desire and attractiveness, and may develop an increasing sense of uselessness. For other women, these menopausal years represent a relief from the nuisance of menstruation and fear of pregnancy. They look upon these years as a release from bondage, and their sexual responses may actually improve. In others responses may remain unchanged, while in a smaller group decreased responsiveness may occur. In the latter the menopause may be an excuse for discontinuance of sexual relations to which they previously assented as a fulfillment of the duties of a housewife, but in which they were never interested. Actual involutional psychological changes, which occasionally occur, but usually not without a history of previous psychoneurotic episodes, are beyond the scope of this paper.

MANAGEMENT

Management of the female in the climacterium embraces careful complete physical examination, blood count, and urinalysis. Regular follow-up examinations should include breast, abdominal, and pelvic survey, and a Papanicolaou smear should be done at regular intervals of six months. These pa-

tients frequently require detailed explanation as to what is happening to them as well as reassurance that the time has not come for them to fall apart like the "one horse shay." Estrogenic support should be given when needed. Sedation, tranquillizers, or both may be required. The patient's healthy attitude and confidence are all important and depend largely on the guidance given her by her physician.

Hormonal support can be given according to various schemata and *should be governed by the patient's needs*. At the present time, conjugated equine estrogens in dosages of 0.625 mg. to 2.5 mg., ethinyl estradiol 0.05 to 0.1 mg., or stilbestrol 0.5 to 1.0 mg. are among the most widely used agents. There are many advocates of combined estrogen and androgen therapy, and a smaller group who advise the use of progestogens along with the estrogenic agents.

In the patient who is beginning her menopause, is still menstruating, but presents herself with distressing symptoms, cyclic therapy is indicated. I prefer to use conjugated equine estrogens 1.25 mg. daily starting with day 7 of the cycle for 21 days. This is followed by a rest period of 7 days during which the patient usually menstruates and therapy is resumed. If the patient has any marked irregularity and is desirous of becoming more regular, one or other of the so-called birth control pills may be used. These may assure better control of the menstrual cycle. Sequential type of treatment usually gives best results. However, experience in their long range usage is lacking, so that we should be cautious here.

Patients who are one or more years beyond their last menstrual period should also be treated cyclically to prevent overstimulation of the breasts and endometrium. Some of these women may exhibit withdrawal bleeding on a regular or occasional basis. This can be troublesome, and one must be alert not to overlook the possible development of endometrial carcinoma. The patient with so responsive an endometrium may do better on combinations of estrogens with androgens in that the withdrawal bleeding may be eliminated. These patients should be warned about the possible development of acne, facial hirsutism, lowering of the voice, and enlargement of the clitoris. In many, libido is markedly increased.

Some women whose estrogen requirements are high tolerate well continuous replacement therapy. Patients who have had their pelvic organs removed surgically tolerate continuous estrogen replacement without regard to age. Estradiol pellet implantation at the time of surgery is advocated by some authorities. They described freedom from menopausal symptoms for up to 18 months in 90 per cent of the patients followed, but this is not as practical a method.

We must not forget that some emotional upsets may require the addition of sedatives or tranquilizers. General health may also be improved by the addition of vitamins and a high protein diet. Anemias and hypothyroid states should be treated as indicated to improve the over-all well-being of the patient.

SUMMARY

We find that due to increased longevity of the population, particularly of women, more and more women require treatment of menopausal and postmenopausal complaints and ills. The more common symptoms and physiological as well as psychological changes are reviewed and discussed. Estrogen and androgen therapy has beneficial effects as well as limitations. The effects and dangers of long range progestogen therapy are not as well understood. We should therefore be somewhat cautious in their utilization.

We cannot promise our ladies that estrogens will restore them to everlasting youth — but we can assure them that they will be healthier, happier, more vigorous, and more contented members of our society.

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POPULATION EXPLOSION

(Concluded from Page 547)

There are tremendous resources for this in the developed nations. If it is not pitifully wasted because of internal and international pride and belligerency, there will be plenty of money for us all to do our part in this war against social destruction.

The United Nations is splendidly engaged in the grand effort to make all countries charitably considerate of the welfare of each other, for only in this way can any one of us achieve the peaceful strength that will enable all of to approach the universal spiritual goal of humanity. The welfare of each depends upon the welfare of all.

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NOTES ON THE DIAGNOSIS OF PULMONARY TUBERCULOSIS, WITH SPECIAL REFERENCE TO THE LEUCOCYTE COUNT

ALEX M. BURGESS, M.D., *Director of Medical Education, The Miriam Hospital, Senior Editor, Rhode Island Medical Journal*

Tuberculosis May Be Missed If Not Taken Into Consideration.

Because the treatment of tuberculosis that is available today is so effective, many physicians have lost interest in the disease. While it is true that it occurs less frequently than formerly and is usually well controlled when it is recognized, it is also true that the diagnosis is often missed or is considerably delayed, to the detriment of the patient. That it is still with us is evidenced by the following figures recorded by the Department of Health of Rhode Island: New cases in the years 1962 to 1966 — *average* 217 per year (maximum 231 in 1965 and minimum 200 in 1966); new cases in the years 1950, 1951 and 1952 — *average* 433.

One of the reasons for failure to recognize the disease appears to be that clinicians have lost the habit of thinking of it. This is especially true in considering the problem presented by a patient whose history and physical examination are not typical. A striking instance is the case of a 22-year old negro man who was apparently in good health until seven days before his admission to a local hospital. He developed malaise, weakness, muscular pains and chills in the evening, followed by profuse sweating. He had no cough until two days before admission when he developed a productive cough, and on one occasion his sputum was mixed with blood. The temperature was 104°F. and the leucocyte count 7,000 with 43 per cent lymphocytes. Physical examination and x-ray studies indicated a lesion occupying a large part of the lower half of the left upper lobe. A diagnosis of "viral pneumonitis" was made and supported by the radiologist. The patient "did not seem very ill." His fever, however, remained high reaching 105° on one occasion, and the antibiotics used had no apparent effect. On the 12th hospital day he was put on isoniazid and para-aminosolicylic acid (PAS), and for the next five days his temperature did not exceed 101° by rectum. Then it gradually fell to normal and remained so until his discharge on the 35th hospital day. All of the seven leucocyte counts which were made during his febrile course were within normal limts. (The relation of normal white counts to tuberculosis will be discussed below). All sputum examinations were normal, but on the 33rd hospital day cultures of both the sputum and gastric washings taken on the second and sixth day after admission were reported positive for acid-fast bacilli. The patient had a tuberculous pneumonia, which probably represents a primary infection, a condition which is not unknown in young negro adults.

In this young man the history was not typical of tuberculosis. It is much commoner to elicit a story of weakness, weight loss, and cough, often with bloody or blood-stained sputum. Fever may or may not be present. Often the patient has some of the above-named symptoms, but with no fever and a normal leucocyte count and with little or no cough or sputum. He may, however, show evidence on physical examination or by x-ray studies which demonstrate pulmonary changes that strongly suggest tuberculosis. Occasionally the physical diagnosis is more definitely suggestive than is the x-ray. In this connection it is worth mentioning that Schinideck and Hardy reported 25 patients who had active tuberculosis attested by the presence of mycobacteria tuberculosis in sputum or gastric washing and that eight of them had normal chest radiographs.[1] These patients were part of a "closed" population aboard a large naval vessel.

In the case of the young negro man which has been described, tuberculosis was not initially considered, and the presence of a normal white count, high remittent fever, and no evidence of improvement eventually influenced the physicians in charge to treat the condition as tuberculosis; and the diagnosis was later confirmed, as has been mentioned, by the report of acid-fast bacilli in cultures from the sputum and gastric washings. This patient was well cared for and the diagnosis was made reasonably promptly. The reason for describing this case is to point out that, in a patient in whom a striking association of high fever and a normal leucocyte count and whose short history and pulmonary findings do not suggest tuberculosis, this disease nevertheless should be seriously considered.

Another patient of interest was a man of 66 years, who gave a history of but five days of illness beginning with a chill and fever which reached 100 to 101 degrees each day. There was almost no

sputum. His temperature was 101.4° on admission, and his leucocyte count 9,200. The record states that "a few fine rales were audible in both lungs anteriorly below the clavicles." An x-ray examination of the chest was reported as follows:—"*Chest*: There is a bilateral perihilar confluent alveolar infiltrate with 'butterfly' distribution noted. The cardiac silhouette is not enlarged considering the transthoracic diameter. The remainder of the lungs show some alveolar infiltrate. The diaphragmatic leaflets are smooth with sharp costo-phrenic sulci. The aorta is somewhat elongated and tortuous. A previous examination done on 4/12/67 revealed a similar cardiac silhouette, but clear lungs. With this type of alveolar distribution, the most frequent cause would be congestive heart failure. However, pneumonias of obscure etiology can occasionally present this way. *Impression*: Bilateral alveolar infiltrates."

Nine days after admission the patient was examined with the demonstration of dullness to light percussion and fine crepitant rales below each clavicle (Figure 1). *Comment*: These findings, in the days before careful percussion and auscultation of the lungs became old-fashioned, would have indicated bilateral apical tuberculosis until proved otherwise.

This patient's fever gradually subsided, and for the next four weeks practically never exceeded 100°. Further x-ray studies did not add any important information until, 36 days after admission, a "Fluorescopic examination with a lordotic review reveals the major alveolar infiltrates described to be situated anteriorly in the anterior segment of both upper lobes." In the meantime all smears and cultures were reported as negative for acid-fast bacilli. In all, the record shows 24 examinations of sputum smears and 11 cultures, all reported negative.

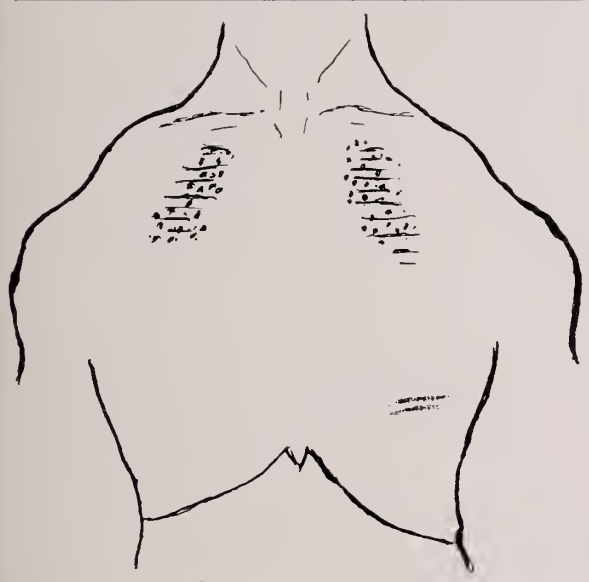


Fig. 1. Diagram copied from the hospital record. (Parallel lines indicate dullness and dots indicate fine rales). This patient was examined by several interns to demonstrate the diagnostic value of light percussion and auscultation.

On the 20th day of his hospitalization the patient was seen in consultation by an expert in pulmonary diseases who noted "very fine rales . . . heard anteriorly." He suspected carcinoma and recommended surgical investigation. The surgeon who saw him did not find anything abnormal in examination of the chest and recommended bronchoscopy and scalene node biopsy. He mentioned that "tuberculosis and fungi should be ruled out." As bronchoscopy and scalene node biopsy were unrevealing, on the 38th hospital day a "wedge resection of the anterior segment of the right lung" was carried out and established the diagnosis of tuberculosis.

This patient's record indicates, as did the record previously cited, that tuberculosis should be considered in all febrile patients with evidence of pulmonary lesions, when fever is present and leucocytosis is absent. It also demonstrates, as did the other case, that x-ray examinations, which usually are of the greatest value, should be accompanied by careful physical examination, which occasionally will give definitive findings which can lead to a correct diagnosis, as was the case in this instance.

One other patient will be briefly mentioned. This was a 72-year old man who suffered and eventually died of "fever of unknown origin." He was not seen by the writer during life. Autopsy demonstrated miliary tuberculosis originating from renal tuberculosis which had not been recognized. During most of his hospital stay his temperature reached 101° to 102° daily. Three leucocyte counts were made, all on days in which his temperature reached 101° or higher. They were recorded as follows: 6,800 on the seventh hospital day, 9,100 on the 21st hospital day, and 11,600 on the 47th hospital day, the day before his death. The significance of leucocyte counts within normal limits at a time when this patient was definitely febrile might well have suggested active tuberculosis. While it is quite true that a marked leucocytosis may be observed in patients suffering from tuberculosis, its absence is definitely suggestive of this infection in a person who is febrile.

In most medical textbooks it is stated that infection by the tubercle bacillus usually does not cause leucocytosis, but it is not stated that, in the presence of fever, the absence of an increased leucocyte count may well be considered *strongly suggestive* of tuberculosis unless some other cause can be identified. The most definite statement on this subject that the writer was able to find was Maurice Fishberg in his book "Pulmonary Tuberculosis" published in 1916. On page 224 one reads the follow-

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ing: "In phthisis the leucocytes are quite normal in number and variety. Even in acute cases, so long as there is no mixed infection, the leucocyte count is unaffected." Recognition of this is of especial importance in the United States as compared with many countries where typhoid, malaria, and other conditions in which absence of leucocytes or leucopenia is the rule are much more common than in the United States.

In view of the opinion that the combination of fever and a normal leucocyte count might well alert the physician to the necessity of considering pulmonary tuberculosis it seemed worthwhile to review the records of a number of patients with the disease. Thus it could be determined whether or not the majority of them did or did not show an elevated leucocyte count. Therefore, the records of 98 patients who had been admitted to the Rhode Island, or the Miriam Hospital in the past six years, and in whom the diagnosis of pulmonary tuberculosis had been authenticated by the demonstration of the tubercle bacillus in smears or cultures of the sputum, were studied. Two patients who had miliary tuberculosis demonstrated at autopsy were added to the list, making a total of 100. The ages of these patients varied from 15 to 88 years, with the average age of 48 years (not including two young children each two years old). The findings can be summarized as follows:

1) *Febrile* patients with temperature of 100° or higher and leucocyte count 10,00 or less 41%
2) *Afebrile* patients with temperature less than 100° and leucocyte count 10,000 or less 27%
3) *Febrile* patients with temperature of 100° or higher and leucocyte count over 10,000 20%
4) *Afebrile* patients with temperature less than 100° and leucocyte count over 10,000 12%

Thus in this study patients with fever in whom the leucocyte count is normal outnumber those febrile patients with leucocytosis by more than two-to-one. The same is true of afebrile patients in whom tuberculosis had been demonstrated, so that of the entire group of 100 patients, all with active disease, the leucocyte count in 68 was normal.

If these results represent the situation that prevails generally, it means that the presence of a leucocyte count within normal limits in patients in whom fever or other findings are compatible with pulmonary tuberculosis, should cause that disease to be strongly suspected unless another explanation can be found. In this country virus infections are the most likely cause of confusion, as was true in the case of the first patient noted in the communication.

SUMMARY AND CONCLUSIONS

The diagnosis of pulmonary tuberculosis can be markedly delayed or even overlooked for one or more of the following reasons: (1) the marked decrease in the number of patients and the effectiveness of treatment has so lessened the attention of physicians to the disease that often it is not considered. In other words, they are now likely not to think of the disease as readily as formerly. (2) With present day dependence on the skill and experience of radiologists, the occasional instance in which careful physical examination can give more definite information than can the x-ray is not recognized, partly because, with the dependence on the radiologist, there has come a definite deterioration in ability to evaluate pulmonary disease by physical examination. (3) The absence of leucocytosis in patients with fever, and especially in those with suggestive evidence of pulmonary disease, has not been given adequate attention as a possible indication of tuberculosis. While it is quite true that the presence of leucocytosis in such patients is in no way against the diagnosis of tuberculosis, it is clear that its absence should strongly suggest the disease unless another cause can be demonstrated. This is upheld by a simple study of leucocyte counts in 100 patients, 98 of whom had proved pulmonary, and two miliary, tuberculosis.

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WHEN TO AUTOMATE THE CLINICAL LABORATORY

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Automation Not Justified Unless Work Load Reaches 25-30 Tests Per Day.

INTRODUCTION

The decision whether to automate a procedure or a set of procedures is not simple due to the large number of variables moving in opposing directions. In this communication a general method is presented for making the decision for non-profit institutions. The criteria selected is that of cost of operation as a function of time and work load.

THE VARIABLES AND ASSUMPTIONS

A. *Time.* The cost of equipment is amortized over a variable time period and utilizes the capital recovery factor according to the following relation:

$$CR = [P\text{-}L]\,[crf_{(i\%,n)}] + Li$$

where CR = cost per annum in straight line depreciation
P = cost (total) for equipment
L = value at the end of the amortizing period
crf = fraction of cost on annual basis to be obtained from Table I
i = interest rate

For most calculations, based on a ten-year period, it is assumed that the equipment has no value (L = O) at the end of the ten-year period. At a rate of interest of ten per cent and a ten-year period, the capital recovery factor (crf) = 0.163. Installation costs, if any, are included here.

B. *Work Load.* In this model the work load is variable and we have asked the question of when to automate, if the work load (N) is 10, 20,... etc., analyses per day. Since the calculation is based on a continuing time period, we have allowed for the usual growth function:

$$Nt = Noe^{kt}$$

In the United States today work is increasing at a rate that doubles every five years; but since K is a variable in our model, it may be introduced for the particular laboratory under consideration.

C. *Cost of Technician Time.* This is introduced as an hourly rate but allowed to increase from bottom of a range to top of a salary range over a period of time for a particular job description. The model assumes that the personnel that operates the instrument will be of the same level, except for the range change. No account of the change in cost of living rise is taken into account.

D. *Technician Capability.* A standard which can be a variable is introduced in terms of analyses per hour. At the present time the Veteran's Administration states that one technician can perform 15,000 tests per annum. This is about six per hour. If for a particular procedure this is different, then this factor should be made variable.

E. *Equipment Capability.* Two factors are of importance. One is the starting up, shutting down, and reading of output time; and the other is the rate of instrument performance.

The first is converted into costs as technician time. For example, if the time for start, read, and shut-down requires a standard two-hour period, then this is converted to costs by assessing two hours of technical time, regardless of work load.

The machine's ability to perform is divided by two, since a large number of standards and quality control specimens are loaded on the sampling tray. Again, this may be made variable.

F. *Down Time.* This is converted to costs as a function of the technical hold-up of the technician. It can be a variable. For some of the available complex, automated equipment today in our laboratory, it amounts to ten per cent of the operating time. The simpler the instrumentation, the smaller this fraction will be.

G. *Preventive Maintenance.* This is about five percent of the running time, and replacement parts must be added on a per annum basis. For some equipment in our laboratory, it has been as much as five per cent of the total equipment cost.

H. *Reagent Cost.* This figure must be obtained from both the on-going operating where costs are usually available and manufacturers' estimates of the cost of reagents for his suggested operation. This is introduced on a per test basis.

I. *Technician Benefits.* All the variables are summed that are convertible to technician time and a standard twenty per cent is added on for benefits.

(Continued on next page)

J. *Direct Costs.* The sum of variables A, C, D, . . . I, are representative of the direct costs.

K. *Indirect Costs.* The indirect costs are obtained as a fraction of the direct costs. These costs include: light, power, housekeeping, administration, overhead, space utilization, telephone, insurance, and safety. This figure usually can be obtained from the controller's office.

PLAN OF SOLUTION OF THE PROBLEM

The model assumes that we wish to compare the cost of doing a fixed number of anlyses per day over an amortizing period. It compares the cost of the two ways of carrying out the work year by year. In this model profit was not included, since it is expected that, with the increase of third party payments, most of the laboratory work in the

FIGURE 1

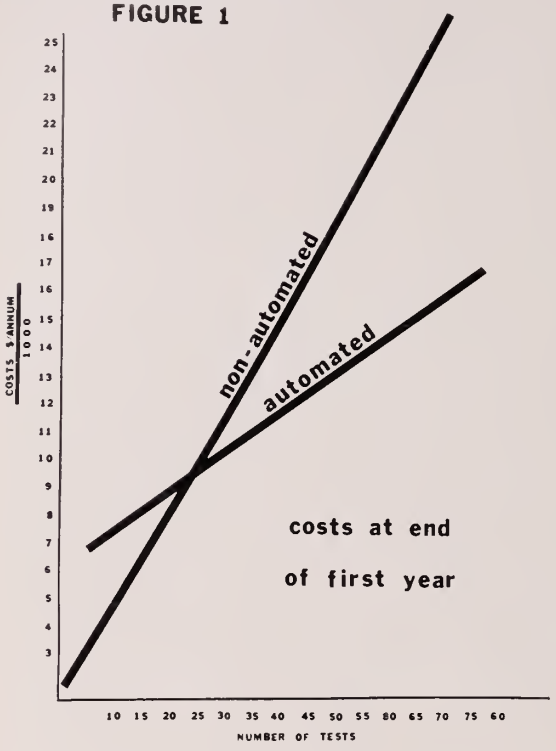


FIGURE 3

N=10

effect of automation

on yearly costs

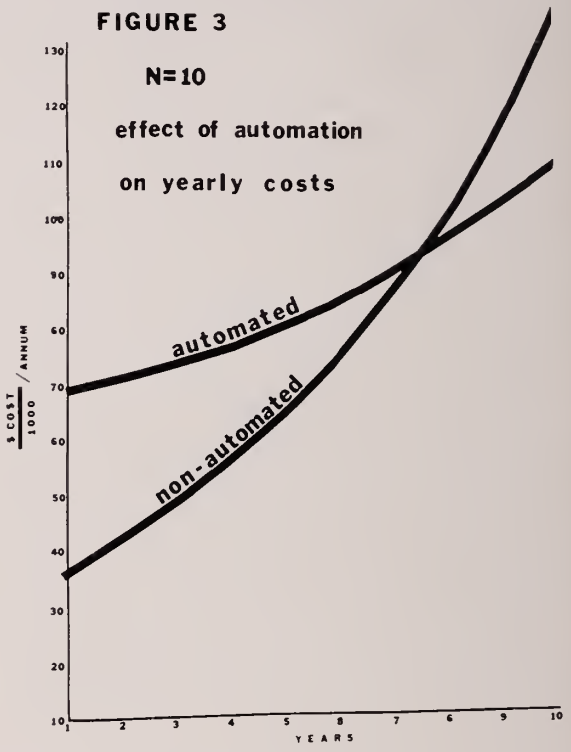


FIGURE 2

N=10

effect of automation on

10 year cumulative cost

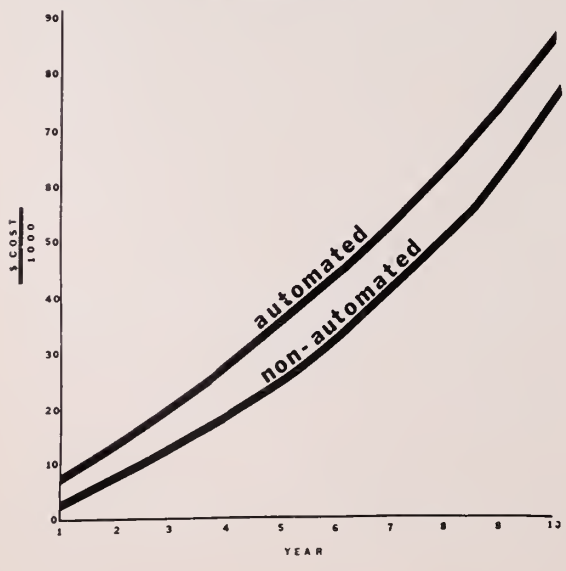
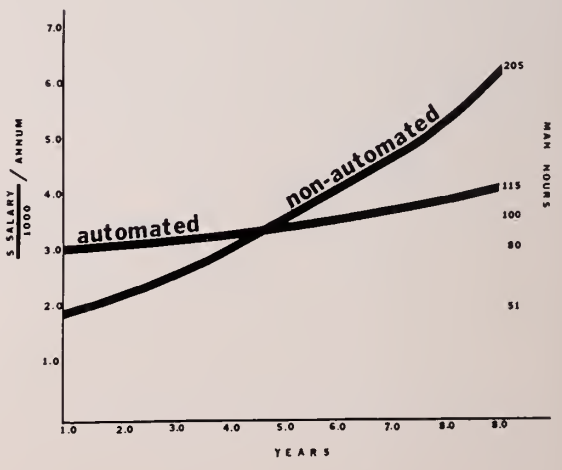


FIGURE 4

N=10

effect of automation on

salary & technical personnel



United States by non-profit agencies will be reimbursable as costs.

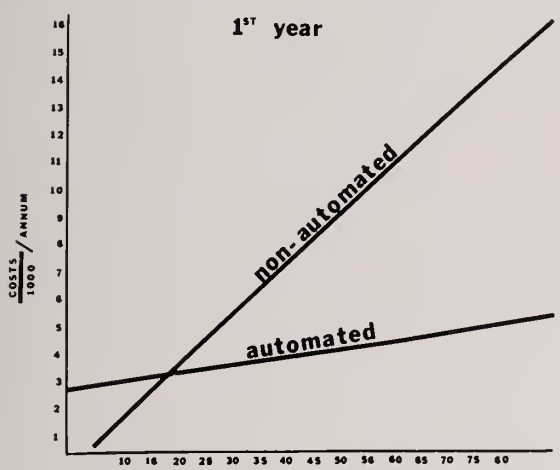
RESULTS

For this simulation, which attempts to compare a colorimetric versus an automated method for sugar (glucose), it appears that the advantages of automation can be shown at the end of the first year if the number of analyses is at the level of 25-30 per day. This is shown in Figure 1.

At the level of effort of 10 analyses per day costs are higher for automation even at the end of equipment life and automation shows no cost advantage. This is shown in Figure 2. On a yearly basis, however, the cost of automation shows an advantage at the end of the seventh year, as shown in Figure 3. At this same (ten per day) level, saving of technical personnel time is seen at the end of the fifth year, as shown in Figure 4.

FIGURE 5

effect of automation on manpower needs as a function of work load



Manpower lowering is shown at the end of the first year, as shown in Figure 5. At this same (ten per day) level, saving of technical personnel time is seen at the end of the fifth year, as shown in Figure 4.

Manpower lowering is shown at the end of the first year if the level of effort is at least twenty tests per day by automation. At fifty tests per day, the manpower needs are cut in half. This is shown shown in Figure 5.

DISCUSSION

Justification for automating a test procedure of the bulk type (e.g., sugar and BUN) would seem to be indicated when the work load approaches 25-30 tests per day. At the level of 10-15 tests per day, the only justification is if automation at that early point makes it easier to automate to a new level at the end of five years. In general, no justification seems reasonable until the work load is at the 25-30 tests per day level. At 15 tests per day there is advantage to automation at the end of a ten-year period.

(Concluded on Page 564)

FIGURE 6

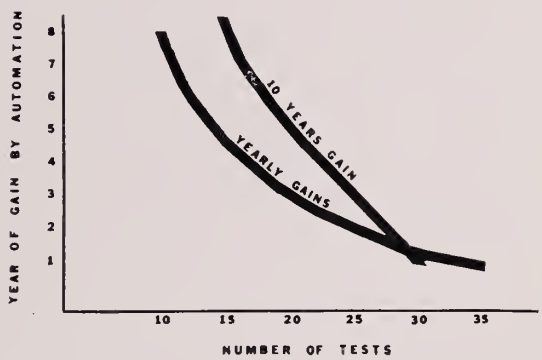


TABLE I
CAPITAL RECOVERY FACTOR

N	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	1.0600	1.0700	1.0800	1.0900	1.1000	1.1100	1.1200	1.1300	1.1400	1.1500
2	0.5454	0.5531	0.5608	0.5685	0.5762	0.5839	0.5917	0.5995	0.6073	0.6151
3	0.3741	0.3811	0.3880	0.3951	0.4021	0.4092	0.4163	0.4235	0.4307	0.4380
4	0.2886	0.2952	0.3019	0.3087	0.3155	0.3223	0.3292	0.3362	0.3432	0.3503
5	0.2374	0.2439	0.2505	0.2571	0.2638	0.2706	0.2774	0.2843	0.2913	0.2983
6	0.2034	0.2098	0.2163	0.2229	0.2296	0.2364	0.2432	0.2502	0.2572	0.2642
7	0.1791	0.1856	0.1921	0.1987	0.2054	0.2122	0.2191	0.2261	0.2332	0.2404
8	0.1610	0.1675	0.1740	0.1807	0.1874	0.1943	0.2013	0.2084	0.2156	0.2229
9	0.1470	0.1535	0.1601	0.1668	0.1736	0.1806	0.1877	0.1949	0.2022	0.2096
10	0.1359	0.1424	0.1490	0.1558	0.1627	0.1698	0.1770	0.1843	0.1917	0.1993
11	0.1268	0.1334	0.1401	0.1469	0.1540	0.1611	0.1684	0.1758	0.1834	0.1911
12	0.1193	0.1259	0.1327	0.1397	0.1468	0.1540	0.1614	0.1690	0.1767	0.1845
13	0.1130	0.1197	0.1265	0.1336	0.1408	0.1482	0.1557	0.1634	0.1712	0.1791
14	0.1076	0.1143	0.1213	0.1284	0.1357	0.1432	0.1509	0.1587	0.1666	0.1747
15	0.1030	0.1098	0.1168	0.1241	0.1315	0.1391	0.1468	0.1547	0.1628	0.1710

THE TEAM PHYSICIAN AND THE LAW*

Judgment, Good Medical Practice, and Adequate Insurance Are Essential.

A. A. SAVASTANO, M.D., *Surgeon-in-Chief, Department of Orthopedic Surgery, Rhode Island Hospital, Providence, R.I.*

In this lawsuit conscious age suits claiming negligence against school officials, coaches, trainers, and physicians have become a reality and are on the increase. Those who are serving as team physicians will do well to take every precaution to avoid becoming directly involved as defendants in tort liability cases. The concepts expressed in the succeeding pages should be thoroughly understood by physicians who become responsible for the medical supervision and treatment of athletes.

A careful pre-season medical evaluation has become an integral part of an athlete's preparation for participation in sports. The principal object of the evaluation is to furnish each athlete with the medical guidance best suited to his special desires and capabilities. Health guidance does not cease with the pre-season medical evaluation. The athlete whenever possible should receive health guidance throughout the season. Assurance of medical services for all athletic contests where injuries may be anticipated should be an important provision in a school's or college's athletic program. Other provisions should include the privilege for physicians to handle on-site injuries under desirable conditions, pre-arranging emergency medical care at practice sessions when a physician is not in attendance, and the establishment of procedures and policies that provide the best medical protection for the athlete. Colleges and universities in most cases have no problem maintaining adequate medical supervision by drawing from the student health services or from consultants. On the other hand high schools as a rule do not enjoy the medical luxury that colleges and universities enjoy; consequently, arrangements have to be made with private physicians. The secondary schools in most cases get medical coverage by seeking the help of local medical societies.

WHAT IS A TEAM PHYSICIAN?

The Committee on the Medical Aspects of Sports of the American Medical Association states that "the title *Team Physician* denotes a physician who is vested by the school with authority to make medical judgments relating to the participation and supervision of students in school sports. Without such a categorical designation of responsibility, there cannot exist the continuing medical assistance the athlete deserves."

The Committee further states "Having accepted the responsibility of acting in behalf of the school, the team physician faces a dual responsibility of ensuring: (1) That the athlete is not deprived unnecessarily of the opportunity to participate if an injury or other clinical condition is not potentially serious and does not interfere with the player's performance; and conversely (2) That the student's future in athletics and in life is not jeopardized by unwarranted eligibility for a particular sport or by premature return to competition in any sport after injury or illness."

The team physician must have the full and complete final say in decisions pertaining to medical eligibility of athletic participation. He must have authority to obtain consultations if such are needed.

WHY IS PRE-PARTICIPATION MEDICAL EVALUATION NECESSARY?

There are many reasons why this is of utmost importance. Chief among which are the following: (1) To determine the health status of prospective athletes prior to their being exposed to participation in competition; (2) To promote optimum health and fitness; (3) To recommend or arrange for further evaluation and treatment of remediable problems; (4) To advise atypical candidates as to sports which for them would provide suitable activity; and (5) To restrict from participation those whose physical limitations present undue risk.

Health examinations of prospective athletes may be accomplished in several ways. The prospective athlete may be examined by the family physician on an individual basis or he can be examined by the school or team physician if one is available. If the above are not available, then arrangements can be made with local medical societies. In order to allow for consultations and treatment if abnormalities are found, the medical evaluation should not be for a specific sport, but for all sports available in that community or school. It is to be remembered that not all sports are contact sports. It may be proper for an athlete to engage in one sport, but not in another.

There has been much comment regarding the team physician and possible or probable legal im-

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plications in his work. Physicians should be cautioned to avoid giving any guarantee that it would be safe for a candidate to participate in a given sport. In addition the physician should not undertake medical treatment without the parents prior consent, express or implied, except for first aid or emergency care which is reasonably necessary to save life or limb. Beyond these considerations, if the physician conforms to the standards of good medical practice in his community there is no reason why medical supervision of any athletic team entails risks of legal liability any greater than in any other area of medical practice.

A joint statement on the legal liability of team physicians in January, 1966 by the Law Department and the Committee on the Medical Aspects of Sports of the American Medical Association reads as follows: "There appears to be no reason why the risks of legal liability for a physician who undertakes the medical supervision and care of members of a school athletic team should be any different from that of a physician in any other branch of practice. In fact, careful examination of reported court decisions and a survey of attorneys for the state medical societies has disclosed very few suits arising out of the medical supervision of school athletic teams or the treatment of injured student athletes at the scene of the injury. Likewise, no record has been found of other cases in which a physician has been sued because of emergency medical care given at the scene of any accident.

"A team physician should conform to the standards of good medical practice in his community. If he undertakes to determine the fitness of a team member to participate in athletic activities, he should be careful not to give any guarantee or assurances that it will be safe for the team member to so participate. It is better for him to state that there appears to be no medical reason why this boy should not participate. Institutions sponsoring athletic teams are urged to require prior written approval from parents of a minor, or the player himself if he has obtained his majority for necessary emergency treatment by the team physician as need may arise. Such a practice, it is felt, would make it clear that the team physician was carrying out an appropriate function in providing emergency treatment on the field or in the training room."

RELEASES AND WAIVERS

Some college team physicians in their pre-season medical examinations occasionally find certain physical defects which normally should be disqualifying. However, in these situations the college team physician is told that the athlete has been participating in practically all sports since grade school. In these situations the coach, the athlete, or even the parents may not be able to understand why the physician considers such defects disqualifying, the parents, therefore, offer to sign a release. The defects most commonly found include loss of a paired organ, history of convulsive disorders, repeated episodes of concussion of the brain, and certain joint or musculo-skeletal problems. Since most athletes are minors, the physician may ask:

1) Is a statement signed by the parents to relinquish any future claims against the individual coach, trainer, or physician of any value?
2) What is the liability of the physician if he does not qualify the athlete to participate, but does nothing to prevent the school department from allowing the athlete to compete?

Generally speaking the parent has no authority to release future claims on behalf of the child. It is to be remembered that the statute of limitations does not begin until the child has become of age. The same thing may be said regarding a release by the minor himself. It is recommended that, when the team physician deems an individual unfit to participate in any given sport or sports, he should in writing inform the parents, the athlete, and the school or college as to his findings. If the physician finds that contrary to his recommendations the boy is participating in sports, he will do well to write again stating his objections to continued participation.

The National Safety Council reports that 67 per cent of all school jurisdiction accidents involving boys, and 59 per cent involving girls occur in physical education and recreation.

WHAT IS NEGLIGENCE?

Negligence is failure to act as a prudent physician would under the same circumstances. Negligence can consist of inaction as well as of action. If one fails to do something expected of him by the law, he can be deemed negligent. Likewise, doing something contrary to what the law expects can also be considered negligence. The mere fact of an accident does not imply that the physician is liable, no matter how serious the injury is. If there is no negligence, there is no liability. However, if an injury is sustained by an athlete because of the physician's negligence, the physician may be liable for it.

CASE EXAMPLE

Welch v. Dunsmuir Joint Union High School District, 326, P. 2d 633 (Calif. 1958)

During a pre-season high school football scrimmage, the plaintiff — the quarterback on one of the teams — attempted a "quarterback sneak."

After being tackled, the plaintiff continued to lie on his back. The coach of the high school, suspect-

(Continued on next page)

ing that the plaintiff might have suffered an injury to the neck, had him take hold of his hands to determine if he were able to grip, which he was able to do at that time.

The player was now carried off the field by eight other players, allegedly without anyone ordering the moving. There was conflicting testimony as to whether or not a doctor, who was admittedly present, examined the plaintiff before he was moved to the sidelines. The only undisputed medical testimony was that the plaintiff is a permanent quadriplegic — caused by damage to the spinal cord in his neck. It was the medical witness's opinion that the injury to the spinal cord took place during the removal of the player from the field without the use of a stretcher. Medical testimony brought out that the failure to use a stretcher was improper medical practice. It was also brought out by the medical witness that the player's ability to grip things with his hand while on the field was proof that the damage had not been done by the tackle, but had occurred afterwards.

The court felt that the evidence indicated that both the doctor and the coach were negligent in the removal of the plaintiff from the field to the sidelines — the coach for failing to wait for the doctor and allowing the plaintiff to be moved, and the doctor for failing to act promptly after the plaintiff's injury.

Judgment — $206,804.00 plus interest and *costs*.

MISMATCHING OF CONTESTANTS

It has been reported that in Oregon in 1961 an inexperienced uncoordinated 15 year old 140 pound high school male freshman was allowed to engage in an interschool football game against a superior team of large experienced boys. This boy allegedly had not received proper instruction and broke his neck. The court ruled that a coach is negligent and fails to take reasonable care of his players when he permits such students to play without proper or adequate instruction.

This case raises several interesting points. The problem of mismatching contestants can become a serious one. In New York a court found negligence because of mismatching of heights and weights in a supervised soccer game. One student was kicked in the head, and another suffered a serious injury. On the other hand there was no negligence in another New York case where a student was injured in wrestling, which was part of the Physical Education Course. Here the activity was under the supervision of a competent person who had approved the voluntary matching of two boys, after comparison of weights and after watching them wrestle together. A California court saw no negligence where seventh and eighth grade teams played touch football and participants had been selected according to skill, and had been properly instructed, and were experienced.

It must be remembered that educational institutions and persons connected with school sports programs become subject to legal liabilities under certain circumstances for injuries occuring during sports participation. This liability in general is established through what in legal language is termed "tort liability." This is the type of liability for personal injuries allegedly caused through a defendant's negligence. According to James S. Fewrig, M.D.: "In order to succeed any such action in tort involves the proof of four essential elements, namely,

1) That the defendant owes a duty to avoid unreasonable risks to others.
2) That the defendant fails to observe that duty.
3) That the failure to observe the duty causes the damage which occurred.
4) That damage did in fact occur to the plaintiff and that the nature and probable extent of the damage are established proofs."

It has become the trend of the times to expand the areas in which tort liability is applied and also to increase the size of tort awards. It is also obvious that the tort case has become a reality in the realm of sports and that these cases are increasing in frequency.

Suits claiming negligence against team physicians, coaches, trainers, and school officials have increased to a marked degree. Doctors serving as team physicians may find themselves involved in legal action in one of two ways, either through tort liability or through direct malpractice suits. Tort cases may involve specifically educational institutions or include a number of defendants.

The team physician is usually involved either as a co-defendant or in a direct malpractice action. In nearly all cases the plaintiff will argue that responsibility for the diagnosis and the treatment of sports injuries should not be the responsibility of coaches and trainers, but should be that of a physician. It is because of this premise that the team physician usually is the major defendant in practically all litigation cases. Regardless of the type of legal action instituted, either tort liability or malpractice, the principal charge which the team physician will have to defend is that of negligence on his part. The juries in these cases usually maintain that a patient-doctor relationship exists between the team physician and the members of the teams under his care. Many physicians serve gratis as "team doctors;" however, it becomes immaterial whether diagnosis or therapy are performed for a fee or gratis. Courts do not differentiate between charity and fee cases. There is an erroneous concept that team physicians who are employed by a state-owned education institution are immune to suit. It is also generally thought that one cannot sue the state unless the state accepts the suit. Regardless

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Editorials

TUBERCULOSIS STILL A HAZARD

Published elsewhere in this issue is a report by Doctor Alex M. Burgess, Sr. which emphasizes that tuberculosis must ever be kept in mind, even in an age of diminishing incidence. It is tragic for a case to be undiagnosed, when effective treatment is available.

That the disease is still of major importance, despite a progressive decline in numbers, is indicated by the results of recent surveys. As of January 1, 1967 there were 90,000 active tuberculosis cases in the United States. An additional 230,000 cases, either inactive or with activity undetermined, were listed in TB registers. It is estimated that 25 million Americans are tuberculin reactors. Provisional results for 1967 indicate 45,441 new active cases (23 per 100,000) and 6,490 deaths(3.3 per 100,000). Tuberculosis not previously reported was listed as a cause of death on 1,808 death certificates (see case of Doctor Burgess). Significant in relation to ghetto health problems is the fact that 30 per cent of new active cases were reported in cities with a population of 500,000 or more. On the basis of an interview sampling among non-institutionalized population, National Health Survey estimates that 1,250,000 individuals know that they have active or inactive tuberculosis.

In the face of these facts and in view of the disturbing experiences described by Doctor Burgess, it is important that tuberculosis always be considered in the diagnosis of obscure fever.

KISSING DISEASE

An acute infectious disease of childhood characterized by high fever, red sore throat, and swollen tender cervical lymph nodes was described by Pfeiffer in Germany in 1889. He called the disorder glandular fever (Druesenfieber). Before the turn of the century epidemics in young people had been reported in both America and England. Sprunt and Evans of the United States in 1920 introduced the term infectious mononucleosis. Longcope, who urged adoption of the new designation, in 1922 described the syndrome as consisting of headache, chills, fever, sore throat and tonsillitis, cough, abdominal pain, sweating, and general malaise. Intermittent fever with temperatures of 100° to 103° F. lasted for several weeks. A high white blood count with a preponderance of mononuclear cells was the rule. Involvement of the liver and spleen and of the peripheral and central nervous systems is now well recognized. Prevalence among college and high school students has given it the popular name of "kissing disease," although infection by other than direct contact (airborne droplets and contaminated eating utensils) is now generally accepted. Current experience indicates that students may be out of classes for as long as three to six months, although Roswell Johnson of Brown University, as earlier reported in this JOURNAL, believes that administration of corticosteroids and early return to classes can shorten the course.

J. R. Paul and W. W. Bunnell in 1932 described the presence of an antibody to raw sheep cells (heterophile agglutinin) in the blood of patients during the active phase of infectious mononucleosis (PB reaction). Davidsohn in 1934 modified the test, using an improved antigen, which resulted in a correlation of 98 per cent. It is of interest that the late Professor Charles A. Stuart of Brown University, working with Alex M. Burgess (now a Senior Editor of this JOURNAL), Herman A. Lawson, and H. E. Wellman, all internists of Providence, Rhode Island, simultaneously carried out studies similar to Davidsohn's and announced at about the same time.

Gail Hoff, a graduate student at Princeton, and her co-worker Doctor Stanley Bauer announced in 1965 a rapid slide test using formalized horse cells. This test is claimed to have greater specificity than raw sheep cells (PB) and to be the equal of the Davidsohn modification (PBD) in specificity. In 426 suspected cases Hoff and Bauer claimed a correlation of 98.5 per cent. It is of further interest locally that Hoff found her inspiration in work reported in 1936 by the same late eminent Professor Charles A. Stuart of Brown.

Although infectious mononucleosis had long been suspected of being a viral infection, proof had until recently eluded investigators, and attempts to define its etiologic agent had failed. The transient nature of heterophile antibodies present only during active illness and their absence altogether in many cases has limited usefulness of the test in epidemiological studies. The apparent breakthrough came about in a rather roundabout fashion. Epstein and Barr in England first successfully cultivated a cell line from Burkitt's East African malignant

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lymphoma (mosquito borne). This has been designated the Epstein-Barr (EB) cell line. Through electron microscopy they were able to demonstrate a herpes-like virus in the cultivated cells — thus EB virus. Gertrude and Werner Henle of the University of Pennsylvania School of Medicine developed an immunifluorescence technique capable of detecting both the virus in Burkitt cells and antibody in the serum of patients with Burkitt tumor.

The Henles and their colleague, Doctor Volker Diehl, had been studying the EB virus for some three years when a striking event occurred. A laboratory technician, whose blood had never shown EB antibodies, missed a week of work because of an acute illness. Upon returning to work she broke out in a rash; a diagnosis of infectious mononucleosis was made. Her blood at this point showed EB antibodies, and a culture of her white cells showed EB virus. The antibodies persisted thereafter.

Niederman and McCollum of Yale, who had been carrying on a prospective study of students started many years before, demonstrated the presence of EB antibodies by the Henle technique in each of 29 patients with infectious mononucleosis. They later demonstrated that the antibody persisted indefinitely. Dingle of Case Western Reserve University was able to supply a series of sera collected and stored over a period of years, comprising matched pre- and post-illness (infectious mononucleosis) specimens. In every case the pre-illness specimen was negative for antibody, while the post-illness specimens without exception contained antibody. The freshly drawn sera of two physicians who had had the disease 20 and 37 years ago both contained significant amounts of antibody. Many other studies by the authors only further confirmed the original observation.

These developments can be summarized as follows:

1. Heterophile antibodies appear only during the acute phase of the disease, reach a peak, decline, and eventually disappear.

2. Heterophile antibodies can now be demonstrated by a rapid slide technique using horse cells.

3. Apparently unrecognized subclinical or mild infections occur. Some develop heterophile antibody; some do not.

4. Burkitt's East African lymphoma cells contain a herpes-like virus described by Epstein and Barr (EB virus).

5. Henle and Henle have developed an immunofluorescence technique to demonstrate both the virus and antibodies to it.

6. Niederman and McCollum (working with the Henles) demonstrated the EB virus in cultured cells from infectious mononucleosis and antibodies to the EB virus in patients with acute infectious mononucleosis.

7. The antibodies persist indefinitely after the illness.

8. No patient who had had the disease failed to show antibody. No patient who developed the disease failed to show antibody. No patient who developed the disease had had antibody prior to contracting the disease. No individual who showed antibody without a history of the disease developed infectious mononucleosis.

9. The relationship between Burkitt's lymphoma, infectious mononucleosis, and EB virus needs further elucidation.

10. Koch's postulates as related to infectious mononucleosis have not, however, been satisfied.

THE NEW MEDICAL EXAMINER ACT

The position of Chief Medical Examiner in Rhode Island has remained vacant for more than a year to the detriment of law enforcement in the State. The last two incumbents resigned because of dissatisfaction with the job. This resulted from lack of professional and administrative independence, too much work, and too little income, all deriving from the then existing Medical Examiner's Act.

Through the cooperative efforts of the Rhode Island Society of Pathologists and the Attorney General, the Medical Examiner's Act was revised. It was introduced into the General Assembly at the request of the Rhode Island Medical Society and passed, with bipartisan support, after certain amendments were added. It was approved by the Governor on June 20, 1968, and will become effective January 2, 1969. (See Page 528)

Under the new law the Chief Medical Examiner who is to be a board certified pathologist with forensic training, will be appointed by the Attorney General, but with the advice and consent of an advisory committee. This committee will consist of the Director of Health, the Attorney General, the Superintendent of State Police, the President of the Rhode Island Medical Society, the President of the Rhode Island Society of Pathologists, or their designees, and two citizens appointed by the Governor. The position has thus, to a great extent, been removed from political influence. It has been strengthened further by creation of the new position of Deputy Chief Medical Examiner, to be filled by a similarly qualified pathologist. Greater administrative control and independence as regards personnel and departmental procedures will enhance operating efficiency.

It is sincerely to be hoped that these provisions will attract qualified persons to the positions of Chief and Deputy Medical Examiner in the State of Rhode Island. Adequate salaries comparable to those paid in similar positions elsewhere in the United States must be provided, for there are few qualified physicians in this highly specialized field and competition is keen.

The State Administration and the Medical Profession of Rhode Island are to be congratulated for sponsoring and the General Assembly for passing this constructive and enlightened legislation.

TREATMENT OF OSTEOPOROSIS, OTOSCLEROSIS, AND OSTEITIS DEFORMANS WITH FLUORIDES

Fluoride prevents tooth decay. The amounts added to drinking water have never been found to be toxic for man. Where exhorbitant amounts of fluoride are found in the drinking water, the disease of endemic fluorosis with increased bone density and calcification of ligaments, tendons and interosseous fascia can be demonstrated. Conversely, it is abundantly clear that, where the fluoride content of a water supply is less than a tenth part per million, there is a significant increase in osteoporosis at all ages. The conclusion is inescapable: there is a minimal and optimal daily requirement of fluoride for health.

The use of fluorine as a therapeutic agent is more controversial. In osteoporosis and Paget's disease its effectiveness is still subject to debate, much of which resolves about the criteria for improvement; the results of calcium, phosphorous and protein balance studies; and the interpretation of clinical results. Purves[1] using 60 mg. of sodium fluoride daily for two to three months claims a change from a negative to a positive calcium balance, and the loss of pain in osteitis deformans. In a recent special communication, Shambaugh and Petrovic[2] have used a dosage schedule of 30, 60, or 120 mg. per day in both Paget's disease and, curiously enough, otosclerosis. This latter use appears at first novel and a contradiction of terms. But on careful examination it is found that otosclerosis is really not a hardening of bone, but rather resembles young callus and is due to marked remodelling activity and irregularly arranged lamellae. The authors indicate that otosclerosis appears to be a process halfway between that of callus formation and osteitis deformans. From their studies they have indicated that the 60 mg. dose per day given over a three month period seems to be more effective than either the smaller or larger doses. No toxic effects as measured by changing density in the skeletal bone were observed over this length of time. But at best, results over these short periods showed only a twenty per cent improvement, and it is assumed of course that controls have shown no improvement at all.

The question of the minimal daily requirement on an age basis and the optimal therapeutic dosage of fluoride awaits a final answer. Clinically, however, the absence of toxic effects with 60 mg. of fluoride a day would seem to indicate its use in cases of severe osteoporosis, osteitis deformans, or progressive otosclerosis.

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[2]Shambaugh, G. E., Jr., and Petrovic, A.: Effects of Sodium Fluoride on Bone. J.A.M.A. 204:969, June 10, 1968.

CELLULAR SYMBIOSIS, MITOCHONDRIA, AND THE ELECTRON MICROSCOPE

Mitochondria, the subcellular energy power packs of every living cell, may be modified bacteria. Symbiosis of plant-plant, plant-animal, and animal-animal is a phenomenon all physicians understand. But that in each and every living cell of all higher organisms the vital essential source of energy may be a degenerate bacterium, modified a billion years ago to become an intracellular symbiot of the most essential nature, is but one of the fantastic biological possibilities, based on more than conjecture, which we now meet almost daily in our scientific literature.

Coincidentally, an electron miroscope has been installed at the Rhode Island Hospital, which can detect mitochondria and other subcellular organelles. Clinical applications of ultramicroscopic changes in diseases, in the liver especially, is a reality. Some of the organelles, the term applied to the subcellular elements, are known from light microscopy: the membranes, the cytoplasm, the nucleus, and nucleolus. But such structures as the mitochondria, endoplasmic reticulum, ribosomes. lysosomes, and polysomes are parts of cellular anatomy that, if not familiar now, will be in a few years when pathology reports will describe not only gross microscopic, but ultrastructural findings as well.

The mitochondria are at the boundary of light microscopy, but with the electron microscope may be seen as granules, rods, or filaments. With the

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electron microscope, even this minute structure is shown to contain a double membrane and a fluid matrix. This matrix itself may be subdivided by an inner membrane to form a crista, a series of parallel ridges. It is in these mitochondria that the electron transport system with its enzymes effects oxidative phosphorylation and the production of high energy phosphate bonds. The entire integrity of the cell and its every existence is dependent upon the energy produced by the mitochondria. Are they bacteria?

This fantastic aspect of the origin of mitochondria is that they appear to be self-replicating, breed true, and are not dependent upon nuclear DNA. They truly carry on a cytoplasmic, independent inheritance. If this did not defy the limits of credulity, let us consider then that with ultrasophisticated techniques the mutant mitochandria may be injected into normal cells, whereupon the normal cell mitochondria then take the form of the mutants. In some experiments investigators have now been able to make new protein material by specifically and selectively using the organelles from widely separated organisms, showing, as it were, that in most living organisms the subcellular parts, including the enzyme systems, are interchangeable. For the Evolutionists this is a very strong argument that evolution is in essence nothing but negative entrophy of a large order, starting with the chance formation of the first amino acid. That this whole process of increasing complexity may be due to the cooperative living on a macromolecular level, in a symbiotic way, of greatly modified bacteria and viruses opens a vista to the imagination as profound as the universe itself.

Back on a very earthly, practical level, however, we welcome the installation of the electron microscope at the Rhode Island Hospital for clinical matters, and are humbled by the thought that even with it we shall still be viewing the subcellular and macro-molecular world probably as dimly as our first telescopists did the cosmos. Whether we look outward or inward, there is a a vastness!

TEAM PHYSICIAN AND THE LAW

(Concluded from Page 560)

of the position of the state in such matters, the physician enjoys absolutely no immunity from lawsuit even when in the employ of the state.

It is also interesting that the statute of limitations, which varies in the several states, is no safeguard against action by a minor, as he can withhold a suit for negligence until he reaches maturity, this in spite of the fact that in ordinary cases the statute of limitations extends to two years from the date of the discovery of the alleged wrong act. Although a trainer may have been probably responsible for the negligence, juries generally regard trainers as agents of the team physician, and negligence on their part is very often imputed to the physician.

Feuring states that liability problems arising from injuries sustained in sports are contingent upon factors which are encountered in private practice. They are based on the premise that there has been a failure to follow the standard procedures and the established methods for the treatment of an injury. The team physician should always conduct himself professionally just as if he were engaged in private practice. Liability suits can arise from many and varied types of negligence charges. Some of these accusations seem almost petty; but, nevertheless, they can be the basis for an award.

Among situations which can be causes of action are the following: 1) Failure to recognize an injury; 2) Certification of a participant with known limitations for a sport; 3) Premature termination of treatment; 4) Failure to follow-up a case which is under treatment, as this may be construed as abandonment of treatment. When athletes terminate treatment before they are medically discharged, it would be wise for the physician to make a serious attempt to get these men to resume treatment; and 5) Failure to refer for consultation to qualified specialists; 6) Failure to explain preoperatively to both the parents and the injured any surgical procedures anticipated and the possible results of this surgery; 7) Promises or guarantees of full, excellent, or good recovery for any specific case; 8) Inadequate recovery in a case in which a new treatment has been tried without explaining same to patients or parents; 9) Failure to obtain x-ray studies of an area of trauma; 10) Failure to check a cast after its application for abnormal constriction or compression; 11) Failure to administer anti-tetanus drugs when indicated; 12) Failure to administer antibiotics when indicated; and 13) Failure to elicit allergic history before prescribing medication.

(Concluded on Page 565)

CLINICAL LABORATORY

(Concluded from Page 557)

The year that automation begins to cost less both on a yearly basis and at the end of a ten year period is shown in Figure 6. In both cases, it will be noted that the level of 25-30 tests per day is the maximum region of feasibility.

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CONCLUSIONS

In order to reduce the incidence of tort-malpractice claims, it is well for a team physician to use good medical judgment, follow and control all sports injury cases, keep good medical records, be in complete control over injury cases, have good working relationships with trainers, keep parents of an injured athlete well informed, never promise complete cures, and not permit anybody to pressure him to allow a boy to play if the boy has not fully recovered from an injury. Finally, a team physician should always be covered by adequate malpractice insurance, either institutional or individual, or both.

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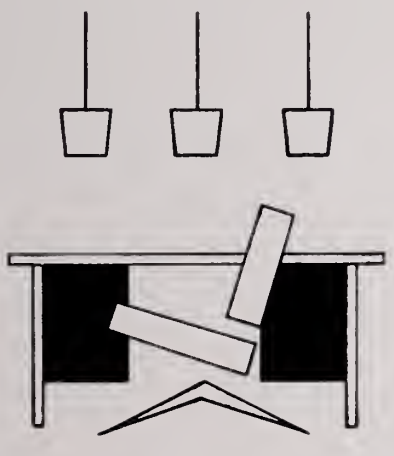
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THE ROLE OF PSYCHIATRY IN PEDIATRICS: AN APPRAISAL

ALLEN R. DYER, A.B., C.T.S., *of Providence, R.I. Fifth year student in the Medical Sciences Program at Brown University*

Preventive Child Psychiatry Is Very Much a Part of Pediatrics

Much attention has recently been given to the possibility of providing comprehensive care in medicine. With the manifold increase in medical knowledge, there can be no question as to the necessity of specialization. The real question is whether in the context of contemporary medical practice it is possible to provide a kind of medical care concerned with all aspects of the patient's health, rather than just his kidney or thyroid. J. L. Caughey describes comprehensive care as an attempt to gain "knowledge and understanding of the patient's problems which may be related to disease, and to the patient as a person and as a member of society."[1]

In understanding comprehensive pediatric care as including all aspects of medical care for children, mental health is not to be excluded; indeed, it is to be emphasized. The mother who brings her child to the pediatrician's office is concerned with all aspects of her child's growth and development. Particularly now that most infectious diseases have been conquered, or at least subdued, the focus of pediatrics has shifted to the problems facing well children, including mental health and emotional development.

Already psychiatry is implicated as having a very central role in pediatrics. To determine the nature and extent of this involvement a survey was taken of the pediatricians practicing in the Providence, Rhode Island area. A questionnaire was sent to each of the fifty-two pediatricians practicing in the Providence area. These doctors were asked questions about the nature of their practice, their patients, their training, and particularly the importance and stance of psychiatry in their practice. Responses were received from twenty-eight of the fifty-two questionnaires. In addition several interviews were held to elucidate some of the subtleties of the issues raised by the questionnaire or its responses.

RESULTS OF THE QUESTIONNAIRE

In order to give the most accurate profile of pediatricians' responses, it will be useful to include exact wordings of several of the questions and the percentages of various responses:

When asked "How often do you find yourself having to deal with psychological problems?" (Table 1), ninety-three per cent of the responding pediatricians answered "often" or "frequently." Twenty-five per cent of these answered "daily," while only two pediatricians, or seven per cent, answered that psychological problems are "rarely" encountered in their practice.

TABLE 1

Question: "How often do you find yourself having to deal with psychological problems?

Answers	Number	Per Cent
"often" or "frequently"	19 } 26	68% } 93%
"daily"	7 }	25% }
"rarely"	2	7%
	28	100%

When asked "How often do you make referrals to a child psychiatrist?" (Table 2), only forty per cent replied "often" or "frequently," and sixty per cent answered "rarely."

TABLE 2

Question: "How often do you make referrals to a child psychiatrist?"

Answers	Number	Per Cent
"often" or "frequently"	11	40%
"rarely"	17	60%
	28	100%

When asked "To what extent were psychiatry, psychology, and other behavioral sciences part of your curriculum?" (Table 3), only twenty-two per cent replied "adequate," while seventy-eight per cent replied "small' or "inadequate."

TABLE 3

Question: "To what extent were psychiatry, psychology, and other behavioral sciences part of your curriculum?

Answers	Number	Per Cent
"adequate"	6	22%
"small part"	15 } 22	53% } 78%
"inadequate"	7 }	25% }
	28	100%

To summarize their feelings on the preceding three questions the pediatricians were asked, "Do you think pediatrics in general could benefit from a more psychological orientation (i.e. by more time devoted to psychiatry in the medical curriculum)?"

(Continued on Page 568)

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ROLE OF PSYCIATRY IN PEDIATRICS

(Continued from Page 566)

(Table 4). To this question eighty-two per cent responded "yes," eleven per cent responded, "maybe" or "possibly," and only seven per cent responded "no."

TABLE 4

Question: "Do you think pediatrics in general could benefit from a more psychological orientation (i.e. by more time devoted to psychiatry in the medical curriculum)?"

Answers	Number	Per Cent
"yes"	23	82%
"maybe"	3	11%
"no"	2	7%
	28	100%

Pediatricians were asked to "Arrange in order of decreasing importance the (following) areas of pediatric attention: infection, nutrition, psychiatry, congenital disorders, and other (specify)" (Table 5). Twenty-six per cent placed psychiatry in each of the three first positions, and twenty-two per cent placed psychiatry in fourth position.

TABLE 5

Question: "Arrange in order of decreasing importance the (following) areas of pediatric attention: infection, nutrition, psychiatry, congenital disorders, and other (specify).

Position in which pediatrician ranked psychiatry	Number	Per Cent
first	5	26%
second	5	26%
third	5	26%
fourth	4	22%
	19	100%

There can be no doubt that Providence pediatricians appreciate the importance of psychiatry in pediatric practice. Considered together the results of these questions emphasize the centrality of psychiatry in pediatric practice and indicate that it has been much neglected.

PSYCHIATRY AND COMPREHENSIVE CARE

The list of problems pediatricians cited in the realm of psychological-emotional disturbances is virtually endless; school behavior and academic problems, school phobia, nocturnal enuresis, egersis, tics galore, anorexia nervosa, ulcerative colitis, peptic ulcers, nail biting, temper tantrums, sexual problems, tension headaches, bronchial asthma, and other conditions in which psychological factors are well recognized, as well as support and advice to parents on matters of feeding, sleeping, and toilet training.

Physical illness itself can be very disruptive to

(Continued on Page 569)

ROLE OF PSYCHIATRY IN PEDIATRICS

(Continued from Page 568)

the child. Routine injections, distasteful medicines, even physical examinations may be provocative of anxiety, but if the illness involves hospitalization or surgery, the experience may be downright traumatic. The loss of continuity in family entailed by hospitalization can be very severe in the younger child. The responsibility of counseling the parents in these matters falls to the pediatrician. Not only must he perceive the subleties of these situations, but he must be able to proceed in a confident, assuring manner. Furthermore he must have a profound enough understanding of human nature to appreciate the problems and anxieties parents themselves face.

The pediatrician's comprehensive care encompasses much more than this. Not only must he deal with psychological abnormalities, but also he must focus attention on normal development. Just as he does not deal exclusively with physical pathology, neither does he deal exclusively with psychopathology. Ideally he is concerned with routine aspects of personality development.

What exactly does the pediatrician do in his brief visits with the family that makes his role in personality development so impressive? First of all he teaches the parents how to feed the baby, what to do when he cries, and how to take care of him. The advice the pediatrician gives to the parents of a newborn is of tantamount importance in the personality as well as physical development of the child, for it is precisely in these areas that the child makes his first responses to the parents; whether he is to feel secure, become independent, or appreciate human interaction depends to a large extent on how the parents handle these early problems. Secondly, the pediatrician provides an example for the parents. By his calm acceptance of the child, by treating the child as a person in his own right, he unambiguously manifests a responsible approach to handling children. Thirdly, he provides one of the first adult contacts for the child. The visit to the pediatrician is not a game, but a real-life encounter in which the child and pediatrician interact on a professional basis. Finally, the pediatrician recognizes psychological problems of the parents, and through his advice tries to deal with them, particularly when he suspects them to be deleterious to the child's environment.

Again an analogy with the physical model of pediatric practice is appropriate; several pediatricians listed preventive medicine as a focus of their practice. Likewise preventive child psychiatry is in order.[2] The pediatrician is in a position to recognize emotional problems before they become manifest crises or develop into psychoses. Psychological problems of adulthood are often manifestations of disturbances which had their roots in childhood. Yet such disturbances seldom manifest themselves as crises in childhood. It is of paramount importance that the pediatrician perceive the roots of such difficulty and take steps to correct it either on his own or by referral to a psychiatrist. As J. P. Edelstein has put it, "Perhaps the pediatrician detects potential danger of faulty emotional development in a child who is not yet having difficulties but in whose family a genuine threat exists."[3]

SUMMARY AND CONCLUSIONS

To provide comprehensive pediatric care is to be responsible for all aspects of the child's health including mental health. The pediatrician is concerned with the physical and emotional development of the child. A survey of Providence pediatricians has revealed that they regularly deal with psychological problems, and that their training has least prepared them for this aspect of their practice. The pediatrician exerts tremendous influence in the family situation by virtue of his position of respect and the nature of his practice: advising parents; providing an example for parents; providing an adult contact for the child; and perceiving psychological problems in the family situation. Thus preventive child psychiatry is very much a part of pediatrics.

What seems indicated by the situation is the development of more adequate training programs in pediatrics, not only for medical students and residents, but also for practicing pediatricians. As Edelstein has put it, "Psychiatrists in conjunction with pediatricians must commit themselves to the task of developing a dynamic approach appropriate to pediatric practice."[3]

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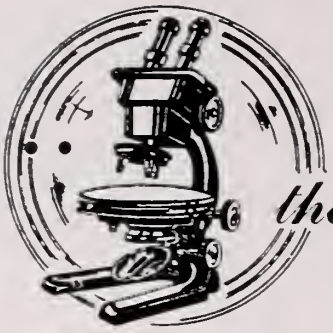
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MARKED CHANGE IN PUBLIC DEMAND FOR HOSPITAL SERVICES

A marked change in the public's demand for services has been experienced by the nation's hospitals in the past two years, according to the American Hospital Association's 1967 Annual Survey of all registered hospitals.

Survey findings, released recently show that from 1965 through 1967 hospital outpatient visits across the nation have been steadily increasing, reaching a national average last year of 749 visits per 1,000 population. The total of such visits in 1967 was 148,229,113.

In the same period, inpatient admissions per 1,000 population have held relatively stable, averaging 148 per 1,000 population. There was an 8 per cent increase in outpatient visits between 1965 and 1967, while the number of inpatient admissions increased by only about one per cent, to a total of 29,361,424 last year.

Edwin L. Crosby, M.D., executive vice president of AHA, pointed out that the 1967 Annual Survey provided the first full-year profile of the nation's hospitals since the start of Medicare on July 1, 1966.

"A comparison of these data with similar information from the last full year (1965) before Medicare's implementation show the nature of changes in hospital utilization and expenses over the period," Dr. Crosby said.

"Many forces affect hospitals and all of the changes cannot be attributed to Medicare," he continued. "Yet, there can be no doubt that the new federal and state programs have had an impact in the nation's hospitals."

Dr. Crosby noted that the increased use of hospital outpatient departments reflects the public's changing view of the role of its community hospitals.

"Hospitals are no longer just for the acutely ill," he said. "They have become the center of the community's entire health care system — a source of a wide range of health services, of which outpatient care is an integral part."

In comparing hospital utilization in 1967 with 1965, the Annual Survey found that in the two-year period, the average length of a hospital stay increased from 7.8 days to 8.2 days. As a result of this longer stay, the number of admissions per bed in community hospitals declined slightly from 35.7 to 34.2 admissions. The average occupancy rate increased by 1.6 per cent, from 76 per cent to 77.6 per cent.

Two factors — more hospital employees and higher wages for those employees — contributed significantly to a 21.6 per cent increase in total hospital expense per patient day in the 1965-67 period, according to the Survey.

Increased workloads in both inpatient and outpatient services resulted in a 7.7 per cent increase in the number of persons employed by community hospitals. Some 246 employees were needed for every 100 patients in 1965, but by 1967 that number had risen to 265 employees per 100 patients.

In all, the nation's 7,160 registered hospitals employed 2,202,930 persons in 1967, of which 1,616,887 were working in 5,850 community (short-term, nongovernmental) hospitals.

Wages paid to hospital workers have been steadily increased in recent years and between 1965 and 1967 the average annual salary of these workers jumped 9.9 per cent, from $4,071 to $4,476. Total payroll for all hospitals last year was $10,460,572,000.

* * *

$2,480,000 SOUGHT IN MALPRACTICE DAMAGES

A whopping total of $2,480,000 in malpractice damages were filed in California courts during the month of May, according to press clippings recently received at the California Medical Association office. These actions further emphasize the necessity of restoring some measure of equity to practicing physicians under the State's professional liability laws.

The following four suits were reported filed during the month:

- $1,000,000—filed in Woodland against three three physicians.
- $800,000—filed in Sacramento by a physician against a physician.

- $480,000—filed in Oxnard against a physician, a hospital, and an insurance carrier.
- $200,000—filed in Sacramento against a physician.

Mr. Robert L. Thomas, CMA Executive Director, urged all physicians to join CMA in requesting the legislature to adopt a package of six bills which would overhaul the State's professional liability laws.

California Medical Executive Memo, June 3, 1968

* * *

MAJORITY OF RADIOLOGISTS IN HOSPITALS BILLING PATIENTS DIRECT

Nearly 70 per cent of American radiologists practicing in voluntary hospitals are now billing patients for all or a substantial portion of their fees for x-ray examinations and treatments, according to a survey of its members made in April by the American College of Radiology.

The figures reflect an approximate gain of 10 per cent in separate billing since a similar survey in the spring of 1967, said ACR President Joseph D. Calhoun of Little Rock, Arkansas. "The independent practice of radiology in voluntary hospitals has become the accepted arrangement for a majority of doctors and institutions."

The survey indicated that 48.3 per cent of responding radiologists in private practice bill for all professional services in hospital x-ray departments. Another 20.5 per cent bill for a part of their services. Such partial billing may apply to categories of patients or types of services in all institutions served. It may also apply to total separate billing in some hospitals and other arrangements in others, Dr. Calhoun said. Many groups of radiologists provide contract services to mental hospitals, industrial clinics and other subsidized facilities where patients are not billed for services, he explained.

* * *

POPULATION MAY EXPLODE AGAIN WITHIN TEN YEARS

The United States may soon be in the midst of another population explosion, the Health Insurance Institute reported recently.

Current estimated are that the nation can expect a new baby boom within five to 10 years — possibly sooner.

The prediction is made despite last year's rate of 17.9 births per 1,000 population — the lowest annual rate on record. Total births in 1967 were 3,533,000, almost 100,000 fewer than the year before.

Predict New Highs

While some demographers use these figures to make a case against a population jump, others predict that the problems of a growing population are just ahead.

(Continued on next page)

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THE BETTMANN ARCHIVE

These experts say there will be record numbers of babies born in the 1970s, with a good chance that the population will double and reach 400 million persons by the end of the century.

The rise in marriages to 1,913,000 last year — the fifth successive year there has been an increase — is one indicator.

Another is that a new crop of eligible husbands — young men between 21 and 24, in short supply since 1956, are now coming of age.

Disparity

For every 100 marriageable young women, the Institute estimates, there are only 91 marriageable young men.

By the 1970s, this disparity is expected to be corrected.

According to the Information Center on Population Problems, "there is good reason to anticipate a new — perhaps bigger — baby boom at the end of the decade."

Peak Months Ahead

Some birth experts point out that despite the use of birth control pills, the size of families will not necessarily be reduced. The pills are used frequently, they say, only to allow couples to space their offspring more conveniently.

* * *

LESSON IN RETRENCHMENT

New York State's retrenchment in its lavish Medicaid program carries it little lesson.

After the Federal Government offered to pick up half the cost of such programs, New York passed a Medicaid bill with the nation's most lenient eligibility provisions. Free medical benefits, for instance, went to any family of four making less than $6,000 a year. Though not everyone eligible signed up for the program, it could have covered 5.7 million people or about a third of the state's population.

Not surprisingly, costs got entirely out of hand. The program would have cost over $900 million in the next fiscal year if no reforms had been made. The costs struck hardest in the upstate counties where $6,000 a year is not exactly a marginal income. To pick up their share of the tab, nearly a third of the state's counties had to enact new sales or property taxes.

Also not surprisingly, the Federal Congress decided this sort of program wasn't what it had in mind when it passed its Medicaid provisions. It thereupon enacted amendments to the effect it would no longer maintain its open-ended support of programs like New York's.

So despite protests, most notably from New York's mayor, the state legislature cut back. It dropped the eligibility level to $5,300, which is still $1,000 above the second most generous state. It

(Continued on Page 573)



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THROUGH THE MICROSCOPE

(Continued from Page 572)

also decided that for any wage-earner between the ages of 21 and 65, the state would cover only "catastrophic illness," involving the expenditures of 25 per cent of the individual's annual income. These provisions are expected to lower the total cost by about $300 million a year.

The necessity to cut back shows quite clearly what the original bill entailed. It was not aimed merely at actual necessity, at insuring that money would be there to provide medical care for those who would not otherwise receive it. Rather, it attempted to ease the burden on those who could afford normal medical care but only at a noticeable sacrifice.

Eliminating life's painful inconveniences for those who suffer somewhat more than their share, of course, is a laudable enough goal in principle. Yet in practice there is a certain depressing note in European experience with the psychological and sociological effects of cradle-to-grave security. Beyond that, New York's experience suggests again that practical dollar-and-cents considerations limit how much of life's burden the Government can assume.

The ability to distinguish true necessity from serious inconvenience it seems, is the difference not only between a compassionate society and a welfare state, but also between responsible budgeting and reckless governmental spending.

(*Wall Street Journal*)

* * *

PHYSICIAN POPULATION INCREASES

An estimated 7,966 June (1968) medical school graduates has raised the total U.S. physician population to 315,868. The number of 1968 graduates is an increase of 217 over the last year and 879 more than in 1960.

During the 1967-68 school year five new medical schools opened their doors. They are:

—University of Arizona School of Medicine.
—Brown University Program in Medical Science.
—University of Hawaii School of Biomedical Sciences.
—Michigan State University College of Human Medicine.
—Pennsylvania State University Milton S. Hershey Medical School.

This brings to 94 the total number of schools now in operation — an increase of 17 since World War II. By 1971, an additional 10 schools will be added, making a total of 104. Twenty of 30 other medical schools have been proposed.

* * *

NEW YORK CITY SITE FOR CONFERENCE ON BLINDNESS

This year by way of special commemoration of its 60th anniversary, the National Society For The Prevention of Blindness will hold its 1968 Annual Conference on Wednesday, Thursday and Friday, November 20, 21 and 22 at the Roosevelt Hotel in New York City.

The three-day conference will coincide with the Society's Annual Membership and Board of Directors meetings, scheduled for November 21 at the Roosevelt Hotel.

About 400 professional and volunteer workers in the prevention-of-blindness field are expected to attend.

Prominent physicians, scientists and educators in prevention-of-blindness and related fields will deliver papers and hold panel discussions and seminars on the latest developments in detecting and combating potentially-blinding eye diseases, community-action eye health programs, and programs for industrial and school eye safety. Booths in the Roosevelt Hotel will house the Society's exhibits as well as those of related organizations and commercial enterprises.

* * *

MEDICAL SCHOOLS URGED TO EMPHASIZE EDUCATIONAL FUNCTIONS

As part of their continuing campaign to increase the number of physicians in the nation, the AMA and the Association of American Medical Colleges

(Continued on next page)

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Sunday urged that medical schools give increased emphasis to educational functions.

At the same time, the two associations predicted that first results of the campaign will enable some 200 more freshmen to enroll in medical schools this year as compared to 1967. By 1969 another increase of over 400 is expected. (Total enrollment in first-year classes in 1967 was approximately 9,475.)

In their joint statement, the AMA and AAMC recognized that a medical college is "a complex, multi-purpose enterprise with important obligations to individuals, various groups, organizations and to society." But they urged that the production of physicians and other health personnel be assigned the highest possible priority.

The statement noted that five new medical schools opened their doors in 1967, and that five others are expected to begin operation this fall. Appropriate plans for organization of additional medical schools "should continue to be strongly encouraged," the two associations said.

* * *

BLUE SHIELD PLANS ASSUME TITLE 19 ROLES

By 1975, some 25 million Americans under 65 are expected to have some or all of their medical care financed by combined federal-state contributions from Title 19 of the Medicare law.

The Title 19 program — sometimes referred to as Medicaid — will cover almost twice as many persons as the more familiar Title 18 Medicare program for the aged.

Blue Shield Plans are playing a major role in Medicare and in the Title 19 program.

On June 1, Pennsylvania Blue Shield begins the processing of physicians' claims for in-hospital services provided to the state's medical assistance patients who are under age 65.

This makes Pennsylvania the 13th state to award Blue Shield a role in Title 19. Termed "Pennsycare," it is estimated that over 1 million persons in Pennsylvania will be eligible for the program.

The other 12 states where Blue Shield Plans have Title 19 roles are California, New Hampshire, Vermont, Michigan, Wisconsin, South Dakota, New Mexico, Montana, Kansas, Iowa, Delaware and Texas.

* * *

WHAT IS NATION'S MOST IMPORTANT PROBLEM?

Gallup Poll released May 25 asked a national sample of 1,534 adults: "What do you think is the most important problem facing this country today?"

The results: Vietnam situation (42 per cent); Race relations (25 per cent); Crime and lawlessness (includes riots, looting, juvenile delinquency (15 per cent); High cost of living, taxes (8 per cent); Poverty (4 per cent); General unrest in nation (3 per cent); Other categories (9 per cent); Don't know, no answer (3 per cent). Total adds to more than 100 per cent since some people gave more than one answer.

This poll, together with a Gallup study made about 3 months earlier, would seem to indicate that the public does not agree with those who denigrate the quality of health care in the U.S. and say the American medical system is near collapse.

What's more, the Dept. of HEW reports that acute illness in the U.S. reached a 10-year low in the year ending June, 1967. Respiratory diseases declined 17 per cent from the previous year and the measles rate was one-third of that reported the year before. Digestive and parasitic diseases also decreased markedly. Injuries, however, increased 10.6 per cent Injuries are never mentioned by medicine's critics when they discuss the U.S. mortality, longevity and days-lost-from-work statistics. Moreover, a great percentage of the public's total expenditure for medical care goes for the treatment of injuries resulting from accidents and violence.

Sometime ago Milford O. Rouse, M.D., president of the AMA, said "A program of public education should be an important part of any plan to provide health care for the poor. We must recognize that the provision of health facilities, in itself, is not a solution to providing health care for the poor. An important part of the answer must lie in the education of the need and near-needy to use facilities that already are available; or those that become available in the future."

An HEW survey — taken in 1963 but just released — shows that the educational level of pregnant American women influences the amount of care they obtain. Those with no more than 8 years of schooling averaged 8.9 visits for care in the year prior to the birth of their children; women who attended college average 13.6 visits. Of those with 8 years or less of school, 39.6 per cent received care by the end of the first three months of preg-

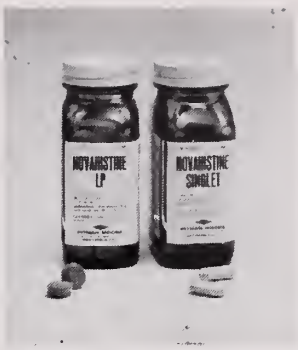
(Continued on Page 576)

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THROUGH THE MICROSCOPE

(Continued from Page 574)

nancy; 72 per cent of the women who attended college received care by this time.

* * *

PHARMACEUTICAL LEADER COMMENTS ON NEW COMPENDIA PROPOSAL

Improvement of existing compendia rather than the creation of an entirely new publication would be the best method of providing more complete drug prescribing information for the nation's physicians, C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, said recently.

"Since only 15 per cent of physicians in private practice favor a new compendium, 64 per cent believe existing sources are adequate, and 21 per cent prefer the revision or expansion of such sources, this approach would be by far the most practical and efficient," the PMA chief executive stated.

His comments followed the release of a national attitude survey of private medical practitioners conducted by Opinion Research Corporation and sponsored by the Pharmaceutical Manufacturers Association.

"PMA had previously stated that we would structure our position on results of this survey, which we regard as highly significant," Mr. Stetler explained. "This we are now prepared to do. Consequently, we have made or will be making specific proposals that will include suggested revisions in the widely-used *Physicians' Desk Reference,* as well as in other major compendia."

In the ORC survey, four out of five physicians say they use the PDR most often, while one in ten refers frequently to *The Medical Letter,* the *Merck Manual,* and the AMA's *New Drugs.* Other compendia, the survey revealed, are used only occasionally, if at all.

"We agree, for example, that the PDR should include a separate list of drugs that are most often prescribed generically, that additional drugs be added to make the volume as comprehensive as is practical, and that every piece of 'negative' information about a drug contained in the approved packaged insert also be a required part of the description in the PDR entry," Mr. Stetler said.

Mr. Stetler said that revised existing compendia would be least disruptive or confusing to physicians' present prescribing practices and could be accomplished at much less cost and with far greater speed than an attempt to prepare and publish an entirely new book.

* * *

4 MILLION DIABETICS ESTIMATED IN U.S.

Some 1.6 million persons in the United States—a majority of them women—have diabetes and do not know it, the Health Insurance Institute stated recently.

Add this to the 2.4 million known diabetics in the U.S. for a total of 4 million—again, the majority of them women— with a disease for which there is no known cure, but which can to some extent be controlled.

It also appears that on the average, women have more severe cases of diabetes than men.

She's Old, Heavy

An analysis of U.S. Public Health Service studies of the "sugar disease" indicates that the type of person most likely to be diabetic is an elderly woman with a weight problem.

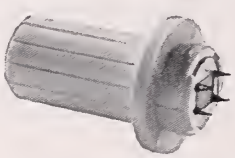
- Nearly 6 out of 10 known diabetics in the United States are women.
- The prevalence of diabetes increases with age, with a peak in the 65-to-74 age group. Researchers have found that in most cases diabetes is not diagnosed until a person is 45 years or older, perhaps because the disease does not strike until then.
- There is a definite relationship between diabetes and obesity. A recent screening of Federal employees indicated that diabetes occurs seven times more frequently among overweight people compared to those of normal weight.

Stress Weight Control

Most doctors agree that avoidance of obesity is the most important, frequently the only measure that will help reduce the incidence and severity of diabetes in older people.

(Continued on Page 578)

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THROUGH THE MICROSCOPE

(Continued from Page 576)

The National Health Survey found that women, on the average, were disabled by diabetes for substantially longer periods than men.

Women had an average of 58 days of restricted activity annually, constrasted with 48 days for men. Women averaged 27 days a year in bed because of diabetes while men diabetics averaged 18 days. This higher level of female disability occurred at all ages except 75 years and over.

The most frequently reported symptoms of diabetes are extreme fatigue, leg pain and eye trouble.

Other symptoms include sudden weakness, frequent urination, thirst, loss of weight, and abnormal appetite, national figures on diabetics show.

In each of these instances, women consistently report more of these symptoms than men. They also report a larger variety of symptoms as they grow older.

Among the most serious characteristics of diabetes is that it often is linked to other chronic conditions.

According to the National Health Survey, 4 out of 5 diabetics in the United States have at least one chronic illness in addition to diabetes, while 58 per cent have three or more illnesses.

* * *



RATE 20 PER CENT OF DIETS IN U.S. HOUSEHOLDS 'POOR'

Trouble with most families in the United States is that they don't know their A,B,Cs and Ds. That's the apparent verdict of a recent statement from the U.S. Department of Agriculture, the Health Insurance Institute says. What the USDA said was that 20 per cent of the diets in U.S. households are "poor" — and getting poorer.

In 1955, the Department said, 6 out of 10 of the nation's households had diets it rated as good. By 1965, the proportion had dropped to 5 out of 10.

Does this mean one out of every two Americans is starving? Not really. Most Americans eat enough, but not necessarily well.

- At last count, the fat consumption of Americans was the highest in the world — double that of persons in Russia.
- We were consuming as much sugar in two weeks as our great grandfathers did in a year.
- We were buying more than 200 million pounds of herbs and spices annually.

The Department of Agriculture says we should be paying more attention to vitamins, especially A and C, and calcium, the nutrients most often found lacking in families' diets.

Increased consumption of milk, vegetables and fruits, suggests the Department, is needed to improve these diets.

Part of Battle

But the Department points out that an awareness of the foods that make up a good diet is only part of the battle. A desire to choose proper foods, and enough money to buy adequate food, must become more universal if most U.S. households are to eat properly.

The following list of important vitamins, what they do and where you find them, was prepared by the Health Insurance Institute.

- Vitamin A is found in fish, milk, butter, egg yolks and animal organs. It is needed for growth, skin care and good vision.
- The B Vitamins are found in vegetables and grains, meat and milk. These vitamins convert food into energy.
- Vitamin C comes largely from citrus fruits and juices. A deficiency can effect the teeth, bones, blood and skin.
- Vitamin D, often called the "sunshine vitamin" is actually manufactured in the body through a combination of other chemicals. These necessary chemicals are found in fish, butter and egg yolks.

Calcium and phosphorous, also are found in milk and other dairy products.

Iron, which is needed for red blood formation, is found in meat and leafy vegetables.

Certain vitamins occur in large quantities of oth-

(Continued on Page 579)



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Contraindications: Hypersensitivity to any component.

Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.

Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity* reactions—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

Upon adverse reaction, stop medication and treat appropriately.

Lederle

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THROUGH THE MICROSCOPE

(Continued from Page 578)

er foods, but are often wasted inadertantly. For instance, fresh vegetables and liver contain much vitamin C, but most of it is lost through cooking.

One medical authority suggests the following ways to conserve food values in cooking:

1. Don't stir air into foods while you cook them.
2. Don't put foods through a sieve while still hot.
3. Don't use baking soda when cooking green vegetables.
4. Use as little water as possible.
5. Don't use long cooking processes such as stewing.
6. Don't throw away the water in which vegetables have been cooked; use it to make gravies, sauces or soups.
7. Don't fry foods that are valuable for their vitamin A, B, or C content.
8. Prepare chopped fruit and vegetable salads just before you serve them.
9. Start cooking frozen foods while they're still frozen.
10. Serve raw frozen foods as soon as they have thawed.

* * *

INCREASED USE OF HOSPITALS BY OVER 65 POPULATION

The nation's over-65 population continued to make increasing use of hospital facilities in the first quarter of 1968, according to Hospital Indicators, a monthly report which appears in HOSPITALS, Journal of the American Hospital Association.

The report noted an 8.4 per cent increase in the rate of admissions of persons 65 and over to community hospitals through the first three months of 1968 over the comparable period of 1967. At the same time, the admission rate for persons under 65 decreased by 0.5 per cent.

In all, patients 65 and over accounted for 26.6 per cent of admissions in 1968's first quarter and also accounted for 33.3 per cent of all inpatient days. In the first quarter of 1967, the 65 and over patients were responsible for 19.2 per cent of all admissions and 31 per cent of the inpatient days.

Statistics for March 1968 show that the average length of hospital stay for elderly patients decreased slightly from a February high of 13.7 days to 13.2 days. The February figure was the highest since the start of medicare in July 1966. Patients under 65 stayed an average of seven days.

In March, according to Hospital Indicators, there were 75,856 admissions per day to community hospitals, with 15,361 persons over 65 being admitted each day. Outpatient visits per day totaled 297,514. Hospital expense per patient day for the month averaged $60.71.

* * *

(Continued on next page)



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DENTAL EDUCATION REQUIRING 8 YEARS STUDY

It now takes eight years of college and dental school for most dentists graduating today, according to the ADA Council on Dental Education. Two out of every three freshmen dental students have had at least four years of college prior to entering dental school. Fifty-six per cent received a bachelor's degree prior to entering dental school and seven per cent have four years of college without obtaining a degree. The 1967-68 academic year resulted in a record enrollment of 14,995 in the nation's 50 dental schools but only 177 of this total were women students, the Council said. Last year also saw the largest freshman enrollment of 4,200 students. This represents an increase of 258 or 6.5 per cent over the 1966-67 freshman class which included 3,942 first-year students.

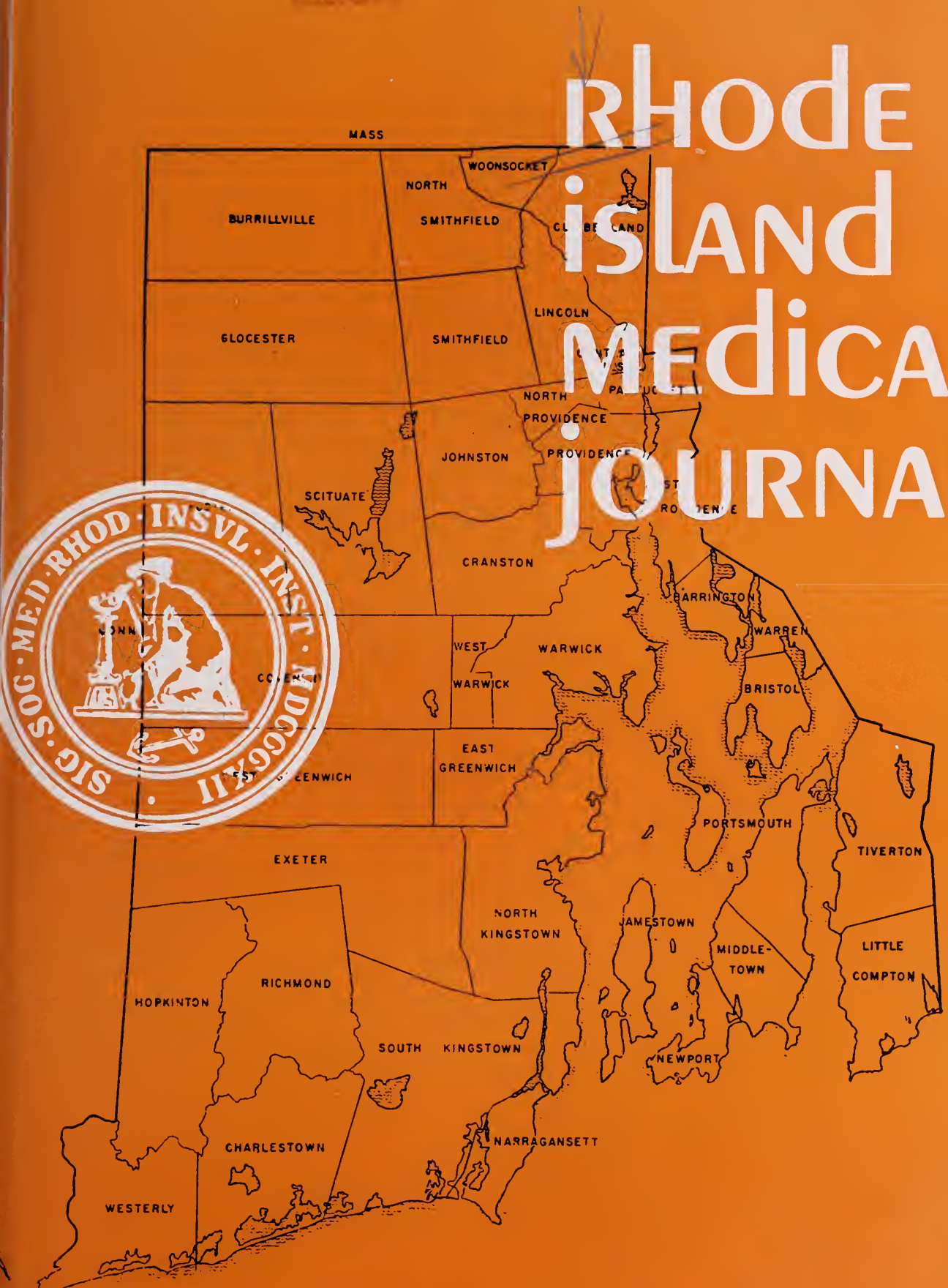
The Council noted that there are currently 25 state-supported and 25 private dental schools in the country. The average four-year cost of dental education to the student is estimated at $9,272 at private institutions and at $5,295 at state supported schools. Living expenses are excluded from these figures but tuition, instruments, textbooks and supplies are included. A review of the geographic distribution of undergraduate students enrolled in dental schools revealed that eight states contributed 53 per cent or about 7,900 of total enrollment. The states listed in descending order of enrolled students are: New York, California, Illinois, Ohio, Pennsylvania, Texas, Michigan and New Jersey.

During the 1967-68 academic year 99 foreign dental graduates were enrolled in U.S. dental schools. Dental graduates from Cuba constituted the greatest number of foreign students (52) followed by Canada (27), Iraq (13), Mexico (12), Brazil (11), India (9), Thailand (8), Puerto Rico (8) and Syria (7).

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RHODE ISLAND MEDICAL JOURNAL



SHORT PAPERS ON CLINICAL SUBJECTS . . . STARTING PAGE 607

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Contraindications: Hypersensitivity to any component.

Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.

Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity* reactions—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

Upon adverse reaction, stop medication and treat appropriately.

Lederle

348-8

The RHODE ISLAND MEDICAL JOURNAL

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Knee-deep

n osteoarthritic pain

If aspirin doesn't help, move in Tandearil.

The trial period is brief: 1 week. one tablet q.i.d. at first. Tandearil ally starts working within 3 to 4 days. en response occurs, as little as 1 or blets daily may hold back pain and ness, and increase joint motion.

On the next page is a summary dverse reactions, contraindications, ning and precautions.

Tandearil.
It can help get his mind off his knee.

Please review full Prescribing Information carefully before prescribing.

For osteoarthritic knees, spines, shoulders, hips, etc.:

Tandearil®
oxyphenbutazone

earil, oxyphenbutazone:
brief summary see next page.

Geigy

TA-6006



Tandearil®
oxyphenbutazone

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: This drug is an analog of phenylbutazone; sensitive patients may be cross-reactive. If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy, and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia), sudden weight gain (water retention), skin reactions, black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension, the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to a serum sickness syndrome may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: Initial: 3 to 6 tablets daily in divided doses. Usually unnecessary to exceed 4 tablets daily. A trial period of one week is considered adequate to determine the therapeutic effect of the drug. Maintenance: Effective level often achieved with 1 or 2 tablets daily, should not exceed 4 tablets daily.

In selecting appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response.

Availability: Tan, round, sugar-coated tablets of 100 mg. in bottles of 100 and 1000.

(B)R-46-800-A

For complete details, please see full Prescribing Information.

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York 10502



Quietude for the hypertensive

Butiserpine®

TABLETS

BUTISOL SODIUM® (sodium butabarbital) 15 mg. and Reserpine 0.1 mg.

Warning: May be habit forming.

for gentle, long-term, blood-pressure control

Butisol Sodium (sodium butabarbital) acts promptly to relieve anxiety while the low dosage of reserpine builds gradually to an effective level for continuous, smooth control of tension and blood pressure. Thus effective therapy can be achieved without the hazards of more potent antihypertensive agents or of reserpine in larger doses.

Contraindications: Porphyria, peptic ulcer, ulcerative colitis, mental depression, sensitivity to either component. *Warning: Use in Pregnancy:* Use reserpine in women of child-bearing age only when essential to patient welfare. Increased respiratory secretions, nasal congestion, cyanosis, and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression. Observe for signs or symptoms of peptic ulcer or ulcerative colitis. Discontinue at first sign of mental depression; keep in mind possibility of suicide. Exercise extreme caution in history of mental depression. May produce cardiac arrhythmias when used with digitalis and quinidine, or may precipitate biliary colic in patients with gallstones. Discontinue 1 to 2 weeks before surgery; inform the anesthesiologist in event of emergency surgery. Exercise caution in history of epilepsy. Discontinue 1 to 2 weeks before ECT.

Adverse Reactions: Drowsiness, skin rash, "hangover," systemic disturbances, increased salivation and gastric secretion, nausea, vomiting, increased intestinal motility, loose stools, angina-like syndrome, arrhythmias, bradycardia, flushing, hypotension, nervousness, paradoxical anxiety, rarely atypical Parkinsonian syndrome, central nervous system sensitization (manifested by dull sensorium, deafness, glaucoma, uveitis and optic atrophy), dryness of mouth, syncope or dizziness, epistaxis, purpura secondary to thrombocytopenia, asthma in susceptible persons, nasal congestion, weight gain, and impotence or decreased libido.

Usual Adult Dosage: Initially, 1 to 4 tablets daily for one week; maintenance, 1 to 2 tablets daily. When used with other antihypertensive agents, reduce dosage of both drugs about 50% and observe carefully for changes in blood pressure.

McNEIL

McNeil Laboratories, Inc.
Fort Washington, Pa.

THE WASHINGTON SCENE



A Summary Report Prepared by the Washington Office of the American Medical Association.

President Johnson signed into law the Health Manpower Act of 1968 which extends for two years, until June 30, 1971, and expands the federal programs of aid to medical and allied health schools.

Other health legislation enacted into law: 1) establishes a National Eye Institute as part of the National Institutes of Health; 2) requires federal buildings to provide easy access to the handicapped; 3) authorizes standards to prevent gas lines from leaking and exploding.

President Johnson termed the health manpower law "a major measure in the battle for better health." It authorizes about $1.2 billion in federal aid to medical and other health personnel schools over two years for construction, expansion and operating expenses. Congress followed most of the Administration's proposals in approving the legislation but limited the extension to two years, instead of the four years requested.

Schools of pharmacy and veterinary medicine were made eligible for the first time.

Money authorizations for schools in the new law:

Medical and other health professions — construction grants, $395 million; institutional support, $285 million; scholarships, $32.8 million; student loans, $70 million; total, $782.8 million.

Nursing — construction, $60 million; institutional support, $75 million; traineeships, $34 million; scholarships, $50 million; student loans, $41 million; total, $260 million.

Allied health (fiscal 1970 only) — construction, $10 million; institutional support, $20 million; traineeships, $5 million; new methods, $4.5 million; total, $39.5 million.

Public health — graduate training, $20.5 million; traineeships, $24 million; total, $44.5 million.

Health research construction, $50 million.

* * *

Both the Democratic and Republican 1968 national campaign platforms cited the importance of the role of private enterprise in the development of government health programs. The GOP placed greater emphasis on private medicine than the Democratic party did.

"While believing no American should be denied adequate medical treatment, we will be diligent in protecting the traditional patient-doctor relationship and the integrity of the medical practitioner," the Republican plank said.

The Republican platform also pledged "to encourage the broadening of private health insurance plans," including extension to cover mental illness.

"Through a partnership of government and private enterprise, we must develop new coordinated approaches to stem the rise in medical costs without lowering the quality or availability of medicare care," the Democratic platform said.

Without being specific, the Democrats indicated support for universal government health insurance or, at the least, wide expansion of medicare or medicaid (or both). Boasting of "giant steps" in the past eight years "in assuring life and health for its citizens," their platform said: "We Democrats are determined to take those final steps that are necessary to make certain that every American, regardless of economic status, shall live out his years without fear of the high costs of sickness."

The Democratic health plank also said medical costs could be lowered by more out-of-hospital care, comprehensive group practice arrangements, increased availability of neighborhood health centers, and the greater use of sub-professional aides.

The Republican platform said "inflation produced by the Johnson-Humphrey Administration" was a major factor in the increases in health care costs.

American Medical Association spokesmen appeared before the platform committees of both parties at pre-convention hearings. Dr. Donald E. Wood, Indianpolis, Ind., chairman of the AMA's Council on Legislative Activities, testified at the Republican hearing; Dr. John R. Kernodle, Burlington, N.C., a member of the AMA Board of Trustees, at the Democratic. Their statements were the same.

The AMA statement expressed hope that the next federal Administration, whether it be Demo-

(Continued on Page 589)

ce-popular treatment for back pains
to have the seventh son of a seventh son
d or walk on the patient's back.





The pain of earache was allegedly relieved by holding a hot roasted onion to the ear.

neadache, a sovereign remedy was
ear a snakeskin round one's head.



A realistic approach to pain relief



Empirin'®

ompound with Codeine hosphate gr. 1/2 No. 3

h tablet contains:
eine Phosphate gr. 1/2 (Warning—
/ be habit forming), Phenacetin gr. 2 1/2,
irin gr. 3 1/2, Caffeine gr. 1/2.

eeps the promise pain relief

& Co.' narcotic products are
"B", and as such are available on oral
ription, where State law permits.

BURROUGHS WELLCOME & CO. (U.S.A.) INC.
Tuckahoe, N.Y.

New

Therapeutic breakthrough in non-narcotic control of the pain of trigeminal neuralgia

Tegretol®
carbamazepine

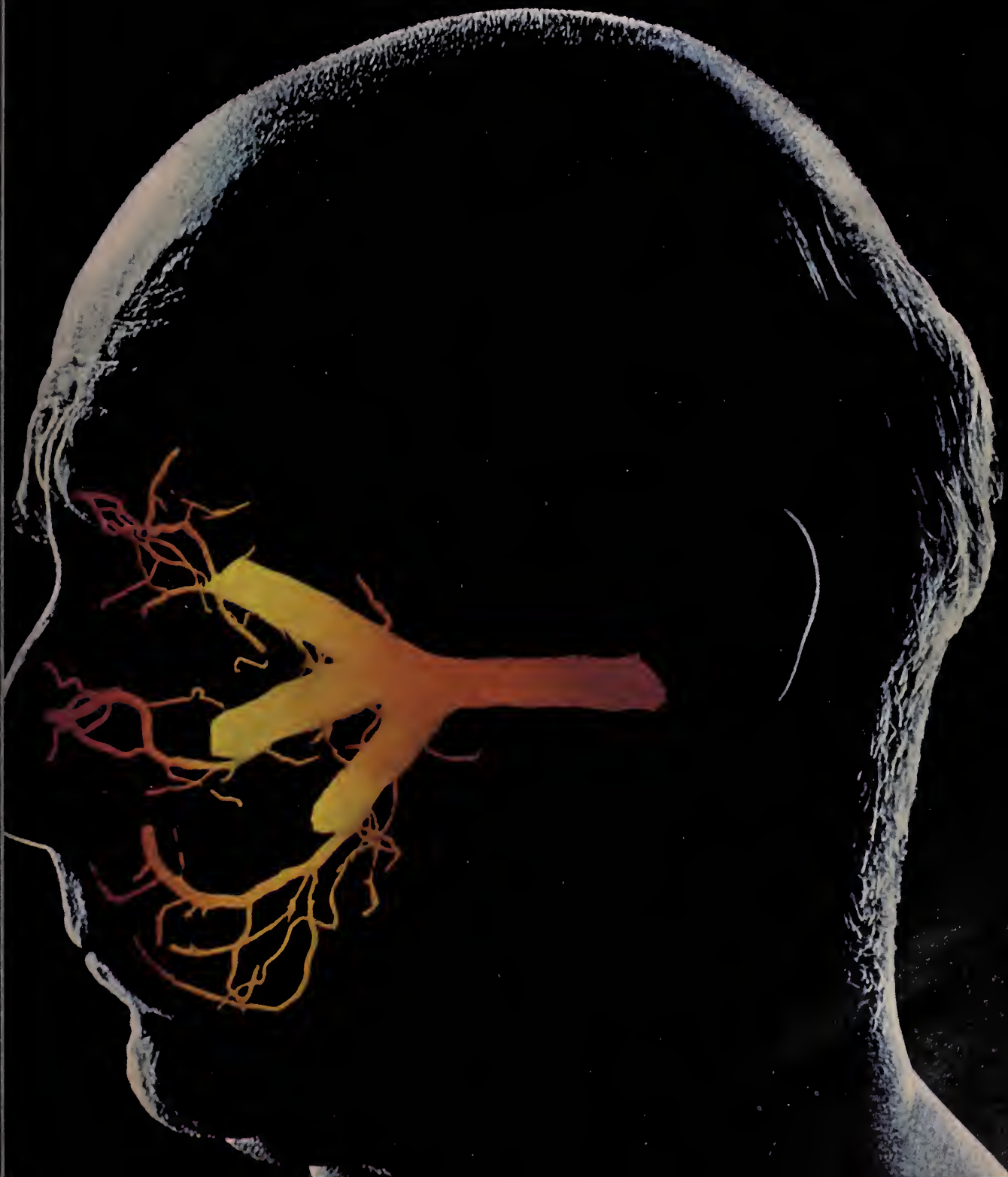
Warning
Fatal cases of aplastic anemia have been reported following treatment with Tegretol. Agranulocytosis, thrombocytopenia and transitory leukopenia have also been observed.
Complete blood and platelet counts should be done prior to and at regular intervals during treatment with the drug (see recommendations under "Important Note and Precautions") to help in the early detection of serious bone marrow injury. Abnormalities in initial blood tests should rule out use of the drug. Also, patients should be made aware of such early toxic signs of a potential hematologic problem as fever, sore throat, mouth ulcers, easy bruising and petechial or purpuric hemorrhage. Should such signs appear, the patient should be advised to discontinue the drug and to report to the physician immediately.

Indication Tegretol is indicated in the treatment of the pain associated with true trigeminal neuralgia. It is not a simple analgesic and should never be administered for relief of trivial facial aches or pains.
Contraindication Do not use in those with a known sensitivity to any tricyclic compound or in those being treated with M.A.O.I. agents. As long a period as possible should elapse before using Tegretol in patients who have been treated with M.A.O.I.'s, with a minimum of 7 days. In such cases, initial dosage should be low and the patient's reaction to gradual increments closely observed.
Important Note and Precautions Familiarity with the clinical symptoms which lead to an accurate diagnosis of true trigeminal neuralgia and with the complete prescribing information, careful patient selection, a thorough examination before treatment and close patient supervision throughout the treatment period are essential to the safe and effective use of this drug.
Where feasible, Tegretol should not be used in conjunction with any potent drug which may increase the possibility of toxic reactions.
In pregnancy, the drug should not be prescribed during the first trimester and thereafter only to patients in whom the clinical situation warrants the potential risk. It should not be administered to nursing mothers.
Patients with increased intraocular pressure should be closely observed during treatment with this drug because of its anticholinergic effect.
Because of the drug's relationship to other tricyclic compounds, the possibility of activation of latent psychosis and, in the elderly, of confusion or agitation, should be considered.
Dizziness and drowsiness may occur and patients should be cautioned about the hazards of operating machinery or automobiles and of engaging in other hazardous tasks.
Use cautiously in patients with a history of coronary artery disease, organic heart disease, congestive failure or liver disease.
Before initiating therapy, the following laboratory procedures should be performed:
1. Complete blood and platelet counts which, if abnormal, should rule out the use of the drug.
2. Baseline evaluations of liver function.
During treatment with Tegretol, the following laboratory procedures should be performed:
1. Complete blood and platelet counts should be done at intervals of one week during the first month of drug treatment, every two weeks during the second and third months, and at monthly intervals thereafter for as long as the patient is taking the drug. A trend toward a decreasing white blood cell count should suggest a dosage reduction and more frequent laboratory and clinical evaluations. Should this trend continue, the should be discontinued.
2. Liver function tests must be performed at regular intervals durin ment with this drug since liver damage may occur during therapy. T drug should be discontinued immediately in cases of aggravated li dysfunction or active liver disease.
3. Periodic eye examinations, including slit-lamp, funduscopy and t etry, are recommended for patients being treated with this drug sin many phenothiazines and related drugs have been shown to cause changes.
4. Complete urinalysis and BUN should be done on patients treate Tegretol because of observed renal dysfunction.
Adverse Reactions Dizziness, drowsiness, unsteadiness on the fee nausea, vomiting, aplastic anemia, transitory leukopenia, agranuloc eosinophilia, leukocytosis, thrombocytopenia, purpura, abnormaliti liver function tests, cholestatic and hepatocellular jaundice, urinary quency, acute urinary retention, oliguria with elevated blood pressu albuminuria, glycosuria, elevated BUN, microscopic deposits in the impotence, disturbances of coordination, confusion, headache, fati blurred vision, transient diplopia and oculomotor disturbances, spe disturbances, abnormal involuntary movements, peripheral neuritis paresthesias, depression with agitation, talkativeness, nystagmus, ti nitus, paralysis and other symptoms of cerebral arterial insufficienc pruritic and erythematous rashes, urticaria, Stevens-Johnson syndro photosensitivity reactions, alterations in skin pigmentation, exfoliati dermatitis, alopecia, diaphoresis, recurrence of thrombophlebitis, e multiforme and nodosum, aggravation of disseminated lupus erythe tosus, gastric distress, abdominal pain, diarrhea, constipation, ano dryness of the mouth and pharynx, glossitis, stomatitis, fever, chills, adenopathy, lymphadenopathy, aching joints and muscles, leg cram conjunctivitis, left ventricular failure, aggravation of hypertension, h tension, syncope and collapse, edema, aggravation of coronary arte disease and congestive heart failure. (Whether these cardiovascular are drug-related is not known. However, some of these complicatio resulted in fatalities.) The necessity for discontinuing the drug shoul dictated by the gravity and severity of the adverse reactions.
Dosage and Administration The drug should always be taken with m if possible.
Initial: One-half tablet (100 mg.) b.i.d. on the first day. Thereafter, th should be increased in one-half tablet (100 mg.) increments every 1 until freedom from pain is achieved. To relieve pain, between 200 m 1200 mg. per 24 hours may be necessary.
Maintenance: Initial control of pain can be maintained in most patie with a dose of 400 mg. to 800 mg. daily. Maintenance doses may ran between 200 mg. and 1200 mg. daily.
At least once every 3 months during treatment period attempts shou made to discontinue the drug or to reduce the dose to the minimum effective level.
Availability Round, white, single-scored tablets of 200 mg. in bottle of 100 and 1000. (B)46-82
For complete details, please see Prescribing Information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

Geig

uncommon relief of uncommon pain



The Divorced Depressive: "Forty Forgotten

"Had a large wedding."
"Had a fine home and family."



TO-5757

Forlorn"

a divorce."
a real loser,
so are
kids."



The loss of marital compatibility results in nearly 500,000 U.S. divorces each year.

Depression characterized by untold guilt feelings, grief and loneliness may follow.

When you diagnose depression, Tofrānil may be indicated for relief.

As maintenance therapy during the active phase of depression, Tofrānil can often help prevent relapse.

The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated. In patients with cardiovascular disease, thyroid disorders, increased intraocular pressure; in those receiving anticholinergics (including antiparkinsonism agents), thyroid medication or antihypertensive adrenergic neuron-blocking agents; and in those in their first trimester of pregnancy – the special precautions listed in the Prescribing Information should be carefully observed.

Toxic reactions severe enough to require discontinuation of Tofrānil are uncommon. However, for complete details, please refer to the complete Prescribing Information.

Turn page for brief summary of Prescribing Information.

in depression

Tofrānil® imipramine hydrochloride
Geigy

in depression





Tofrānil® Geigy

imipramine
hydrochloride

Tofrānil®, imipramine hydrochloride
Indications: Tofrānil is recommended for the treatment of depressive states of diverse psychopathology.
Contraindications: The concomitant use of this agent and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before this drug may be substituted. Initial dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.
Warning: Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the possible risks, it should not be used during the first trimester of pregnancy. Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.
Precautions: Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy. Because of its anticholinergic effect, caution should be observed in prescribing the drug for patients with increased intraocular pressure.
In rare instances, transient cardiac arrhythmias have occurred in hyperthyroid patients and in patients receiving thyroid medication when this compound was added to the regimen. Imipramine may block the pharmacologic activity of guanethidine and other related adrenergic neuron-blocking agents.
The drug is not recommended at the present time in patients under 12 years of age.
Adverse Reactions: Dryness of the mouth, tachycardia, constipation, disturbances of accommodation, sweating, dizziness, weight gain, urinary frequency or retention, nausea and vomiting, peripheral neuritis, mild parkinson-like syndrome, tremors, rare cases of falling in elderly patients, confusional states (with such symptoms as hallucinations and disorientation), activation of psychosis in schizophrenics and agitation (including hypomanic and manic episodes) which may require dosage reduction and/or addition of a tranquilizer or temporary discontinuation of the drug, epileptiform seizures, orthostatic hypotension and substantial blood pressure fall in hypertensive patients, purpura, transient jaundice, bone marrow depression including agranulocytosis, sensitization and skin rash including photosensitization, eosinophilia, and mild withdrawal symptoms on sudden discontinuation after prolonged treatment with high doses. Occasional hormonal effects (impotence, decreased libido, and estrogenic effects) may be observed. Atropine-like effects may be more pronounced (e.g. paralytic ileus) in susceptible patients and in those using anticholinergic agents (including antiparkinsonism drugs).
Outpatient Adult Dosage: Initially, 75 mg. daily, increased, if necessary, to 150 or 200 mg. Maintenance dosage may be lower, 50 to 150 mg. daily, if possible.
Geriatric and Adolescent Dosage: Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.
A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.
Availability: Round tablets of 25 and 50 mg.; triangular tablets of 10 mg. for geriatric and adolescent use; and ampuls, each containing 25 mg. in 2 cc. for I.M. administration.
(B)R-46-850-C

For complete details, please refer to the full Prescribing Information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York 10502

TO-6757

THE WASHINGTON SCENE

(Continued from Page 588)

cratic or Republican, "will provide men and women in medicine, and those engaged in the allied sciences, the opportunity to think and work in a free atmosphere to pursue their common goal of a better and more healthful life for everyone."

The AMA emphasized the desirability of health programs being partnerships among private enterprise and federal, state and local governments. The AMA pledged its support to such cooperative programs for mental illness, infant mortality, occupational health and safety, and education of physicians and allied health personnel.

Concerning health care costs, the AMA said:

"We believe that programs to increase the production of medical and other health personnel can be cooperatively and effectively undertaken. We are firmly convinced that we can and must work toward a health in the inflationary spiral, and toward a productive use of tax dollars expended in the health area. New and old tax supported programs in the health field should be critically evaluated so that while the best health care is attained, overlapping, waste and unnecessary programming are avoided. In this regard, we recommend the establishment of a cabinet-level Department of Health, headed by a physician as Secretary, with overall responsibility for all federal health programs, so that maximum effectiveness may be attained.

"We have always maintained that high-quality medical care should be available for all Americans, including those who need assistance in meeting the costs of such care. . . . Firmly convinced that adequate health insurance coverage is the choice mechanism for the financing of quality health care costs, we suggest that the country embark on a program of tax credits for health insurance premiums. Under such a plan, all individuals and families would be encouraged to provide themselves with health care cost protection, with those in financial need receiving the greater amount of tax credit on a graduated basis."

* * *

The Food and Drug Administration and the Pharmaceutical Manufacturers Association differed as to the significance of the findings of a Georgetown University School of Medicine team after studies comparing three brand-name drugs with their generic versions.

Drugs tested were diphenylhydantoin, prescribed for treatment of epilepsy, chloramphenicol and sulfisoxazole. The studies supported by the FDA showed:

1. Some generic drugs are absorbed more slowly by the body than the brand;

2. At least one generic drug was absorbed faster by the body than the brand drug;

3. Absorption rates were governed by such factors as crystal size of the drug, hardness of tablets, and the types of drug capsules.

"Our findings raise serious doubts about the equality of different products of the same drug in the treatment of disease," said Christopher M. Martin, M.D., Professor of Medicine and Pharmacology.

"The studies by Dr. Martin and his research team, showing how different versions of the same drug behave differently in man, provide further proof of the scientific fact that these differences can be significant in patients," C. Joseph Stetler, PMA President said.

"Clearly, there is no evidence to indicate that all formulations of the same drug are equivalent. From all the evidence that has been developed to date, as Dr. Martin's studies point out, quite the opposite may be true."

On the other hand, FDA Commissioner Herbert Ley, Jr., M.D., said his agency "has in no sense concluded that 'generic' drugs are less effective as a class than 'brand-name' products."

"In my opinion, there are fewer than two dozen drugs where therapeutic differences among competing products may be a problem," he said.

"Data from the Georgetown work have been useful to the FDA, but it is completely unwarranted to reach any general conclusions about drug equivalency on the basis of these exploratory studies."

* * *

A retired air force officer, Maj. Gen. Theodore C. Bedwell, Jr., M.D., 59, has been appointed to the newly-established post of chief medical officer for the medicare program. He will be liaison with the medical profession.

He most recently was director of staff, office of the deputy assistant secretary of defense (manpower — health and medical). A native of Texas, he was graduated from Baylor University Medical College. A holder of the distinguished service medal, Dr. Bedwell in 1962 received the American Medical Association's special aerospace medicine honor citation.

THE NEW MORALITY

A college student from Texas told me, "In my state they really raise hell about the new morality. This one old geezer said he was against it for three reasons. "First, it's against the law of nature. Second, it's destructive of family living. And third, I ain't gettin' none of it."

. . . James A. Michener, from the N.Y. Times.



"Upper respiratory infection! I thought everything was a 'virus' these days?"

Some U.R.I. patients are more miserable than others.

That's why we make Novahistine® in two different tablet formulations.

And let you control the dosage.

With Novahistine LP tablets and Novahistine Singlet™ tablets you have the range and flexibility of decongestant dosage that lets you prescribe for the needs of the individual patient.

Novahistine LP tablets are most useful for relief of nasal congestion in patients without pain or fever.

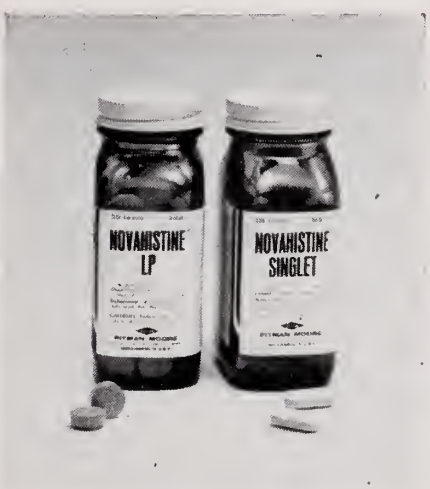
Novahistine Singlet tablets, which provide analgesic-antipyretic effect, as well as decongestant action, are indicated for upper respiratory infections accompanied by pain, aches and fever.

Whether you prescribe Novahistine LP or Novahistine Singlet, a total daily dose of 3 or 4 tablets will usually provide effective, continuous relief.

Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

Each Novahistine LP tablet contains phenylephrine hydrochloride, 25 mg.; and chlorpheniramine maleate, 4 mg.

Each Novahistine Singlet tablet contains phenylephrine hydrochloride, 40 mg.; chlorpheniramine maleate, 8 mg.; and acetaminophen, 500 mg.



DOW PITMAN-MOORE DIVISION OF THE DOW CHEMICAL COMPANY, INDIANAPOLIS



Geigy



Regroton®

chlorthalidone 50 mg.
reserpine 0.25 mg.

One Regroton tablet a day usually helps you and your patient bring high blood pressure down and keep it down.

Regroton produces a smooth, long-acting effect that usually reduces both systolic and diastolic pressures. At the same time it often acts to allay anxiety and nervous tension associated with hypertension.

Although Regroton is generally well tolerated, adverse reactions may occur. This drug is contraindicated in mental depression, demonstrated hypersensitivity, and most cases of severe renal or hepatic diseases. For a complete list of side effects, please see the Prescribing Information summarized on the following page.

Regroton®

chlorthalidone 50 mg.
reserpine 0.25 mg.



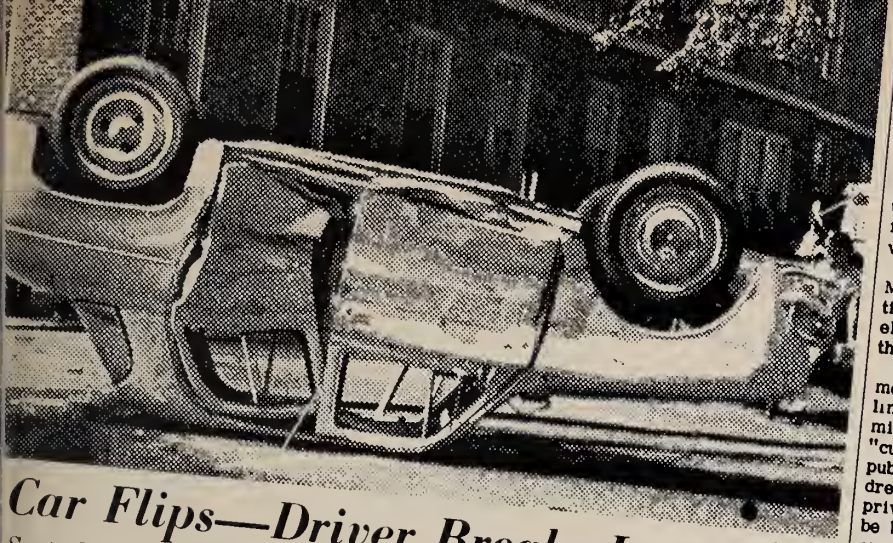
One Regroton tablet a day usually helps you and your patient bring high blood pressure down and keep it down.

Indications: Hypertension. **Contraindications:** History of mental depression, hypersensitivity, and most cases of severe renal or hepatic diseases. **Warning:** With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue coated potassium-containing formulations immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur. Discontinue one week before electroshock therapy, and if depression or peptic ulcer occurs. *Use in pregnancy:* Because chlorthalidone may cross the placental barrier and appear in cord blood and thiazides may appear in breast milk, this drug should be used with care in pregnant patients and nursing mothers. When used in women of childbearing age, the potential benefits of the drug should be weighed against the possible hazards to the fetus. Use of chlorthalidone may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. Increased respiratory secretions, nasal congestion, cyanosis and anorexia may occur in infants born to reserpine-treated mothers. **Precautions:** Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. To avoid hypotension during surgery, discontinue therapy with this agent two weeks prior to elective surgical procedures. In emergency surgery, use, if needed, anticholinergic or adrenergic drugs or other supportive measures as indicated. Because of the possibility of progression of renal damage, periodic kidney function tests are indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated. Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria. Take particular care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Severe salt restriction is not recommended. Use cautiously in patients with ulcerative colitis or gallstones (biliary colic may be precipitated). Bronchial asthma may occur in susceptible patients. **Adverse Reactions:** The drug is generally well tolerated. The most frequent side effects are nausea, gastric irritation, vomiting, diarrhea, constipation, muscle cramps, headache, dizziness and acute gout. Other potential side effects include angina pectoris, anxiety, depression, bradycardia and ectopic cardiac rhythms (especially when used with digitalis), drowsiness, dull sensorium, hyperglycemia and glycosuria, hyperuricemia, lassitude, restlessness, transient myopia, impotence or dysuria, orthostatic hypotension which may be potentiated when chlorthalidone is combined with alcohol, barbiturates or narcotics, leukopenia, aplastic anemia, skin rashes, thrombocytopenia, agranulocytosis, nasal stuffiness, increased gastric secretions, nightmare, purpura, urticaria, ecchymosis, weakness, uveitis, optic atrophy and glaucoma, and pruritus. Eruptions and/or flushing of the skin, a reversible paralysis agitans-like syndrome, blurred vision, conjunctival injection, increased susceptibility to colds, dyspnea, weight gain, decreased libido, dryness of the mouth, deafness, anorexia, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Jaundice, xanthopsia, paresthesia, photosensitization and necrotizing angiitis are possible. **Average Dosage:** One tablet daily with breakfast. **Availability:** Pink, single-scored tablets in bottles of 100 and 1000.
(B) 46-600-C

For details, please see complete prescribing information.

Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York 10502

RE-6225



STAFF PHOTO

Car Flips—Driver Breaks Leg

Sept. 7. John P. Jones of incurred a broken leg today

Patrolman B. R. Brown, the car hit a fire hydrant and flipped over on its

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le's had enough excitement for one day.

or the patient who has been through an accident, the worry and nxiety following the experience may actually heighten the per-eption of pain. This is why there's a classic ¼ grain *sedative* ose of phenobarbital in Phenaphen with Codeine—*to take the ervous "edge" off,* so the rest of the formula can control the ain more effectively.

Phenaphen® with Codeine

enaphen® with Codeine No. 2, No. 3, or No. 4 contains: *Phenobarbital* (¼ gr.), 16.2 mg. arning: may be habit forming); Aspirin (2½ gr.), 162.0 mg.; Phenacetin (3 gr.), 194.0 mg.; oscyamine sulfate, 0.031 mg.; Codeine Phosphate, ¼ gr. (No. 2), ½ gr. (No. 3), or 1 gr. o. 4). (Warning: may be habit forming).

IE COMPOUND ANALGESIC THAT CALMS INSTEAD OF CAFFEINATES

Indications: Phenaphen with Codeine provides relief in severer grades of pain, on low codeine dosage, with minimal possibility of side effects. Its use frequently makes unnecessary the use of addicting narcotics. **Contraindications:** Hypersensitivity to any of the components. **Precautions:** As with all phenacetin-containing products excessive or prolonged use should be avoided. **Side effects:** Side effects are uncommon, although nausea, constipation and drowsiness may occur. **Dosage:** 1 or 2 capsules at 2 to 4 hour intervals, or as directed by physician. For further details see product literature.

A. H. ROBINS COMPANY
RICHMOND, VA. 23220 A·H·ROBINS



a comprehensive hematinic



Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150	mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin (The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	7.5	mcg.
Iron, Elemental (as Ferrous Fumarate)	110	mg.
Ascorbic Acid (Vitamin C)	75	mg.
Folic Acid	1	mg.

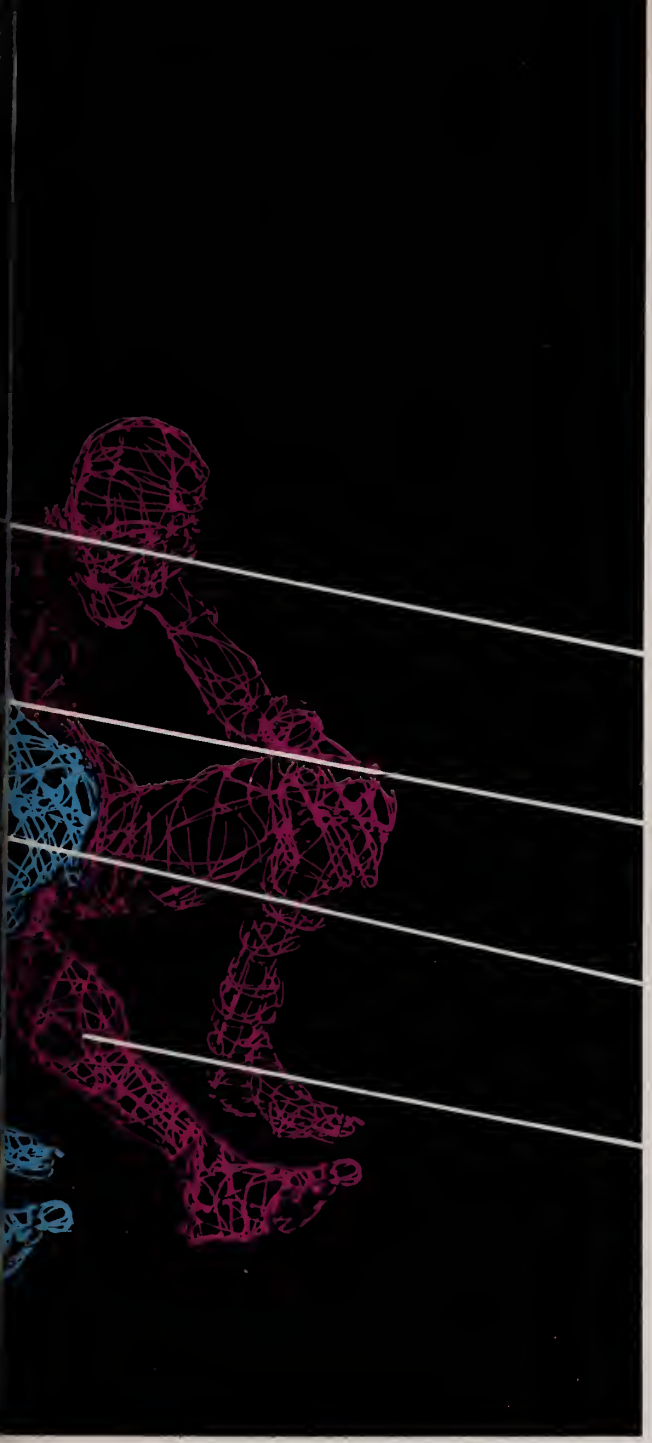
Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

Contraindications: Hemochromatosis and hemosiderosis.

Precautions: Anemia is a manifestation that requires appro investigation to determine its cause or causes.

In pernicious anemia, the use of folic acid without ad vitamin B_{12} therapy may result in hematologic remission bu rological progression. Adequate doses of vitamin B_{12} (pare or oral with potent intrinsic factor as in Trinsicon® [hen concentrate with intrinsic factor, Lilly]) usually prevent, h improve the neurological changes.

As with all preparations containing intrinsic factor, resi may develop in some cases of pernicious anemia to the po tion of absorption of physiological doses of vitamin B_{12}. If ance occurs, parenteral therapy, or oral therapy with so- massive doses of vitamin B_{12}, may be necessary. No singl men fits all cases, and the status of the patient obser follow-up is the final criterion for adequacy of therapy. P



You can treat combined deficiencies with

Trinsicon®

—the multifactor hematinic

Vitamin B_{12} plus intrinsic factor (15 mcg. B_{12} activity)—helps provide adequate levels of this important vitamin.

Folic acid (1 mg.)—treats nutritional macrocytic anemias and/or malabsorption syndromes.

Ascorbic acid (75 mg.)—augments the conversion of folic acid to its active form and helps iron absorption.

Iron (110 mg.)—treats hypochromic anemia.

nical and laboratory studies are considered essential and are commended.

lverse Reactions: In rare instances, iron in therapeutic doses oduces gastro-intestinal reactions, such as diarrhea or constiation. Reducing the dose and administering it with meals will nimize these effects.

In extremely rare instances, skin rash suggesting allergy has llowed oral administration of liver-stomach material. Instances apparent allergic sensitization have also been reported after al administration of folic acid.

osage: One Pulvule twice a day. (Two Pulvules daily produce a andard response in the average uncomplicated case of pernious anemia.)

ow Supplied: Pulvules Trinsicon® (hematinic concentrate with trinsic factor, Lilly), in bottles of 60 and 500. [032568]

Additional information available to physicians upon request.

Eli Lilly and Company, Indianapolis, Indiana 46206.

801668

Lilly

In peptic ulcer: the antacid puzzle



solved by Mylanta®

aluminum and magnesium hydroxides *plus* simethicone

"will it ease the pain?"

Mylanta helps relieve ulcer pain with the two most widely prescribed antacids: aluminum and magnesium hydroxides.

will it help "my gassy stomach"?

Mylanta *also* contains simethicone: for concomitant relief of G.I. gas distress.

"will this one taste O. K.?"

The *prolonged* acceptance of Mylanta was recently confirmed in 87.5% of 104 patients—after a total of 20,459 documented days of therapy.* *Danhof, I. E.: Report on file.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. *Dosage:* One or two tablets (well chewed or allowed to dissolve in the mouth) or one or two teaspoonfuls to be taken between meals and at bedtime.

Stuart Division/Pasadena, Calif.
ATLAS CHEMICAL INDUSTRIES, INC.

DERMAQUIZ

Conducted by FRANCESCO RONCHESE, M.D.



At left, a scaly, moist, oozing, desquamating sole, painful and itching, going on for a few years.

At right, thick asbestos-like, cement-like, fissured sole of a lifetime duration.

Answer on Page 639

When Care Furnished to Extended Care Facility Patients Can Be Covered by Medicare

To assure prompt and equitable determinations as to whether care furnished to patients in extended care facilities is covered and can be paid for under Medicare, the understanding and cooperation of Physicians, hospitals, ECFs, utilization review committees, intermediaries, and carriers are vital. We hope this message will help to achieve these objectives.*

A. *What is "Extended Care"?* The covered level of care provided when the patient's condition upon his discharge from a hospital requires him to be in an institution for the *primary* purpose of receiving continuous skilled nursing services and other professional services.

B. *What Are "Skilled Services"?* A skilled service is one which *must* be furnished by or under the supervision of trained medical or paramedical personnel. A service is not skilled merely because it is performed by a trained medical or paramedical person. A service which can be safely and adequately self-administered or performed by the average non-medical person, without the direct supervision of trained medical or paramedical personnel, is a non-skilled service without regard to who actually provides the service.

C. *What Is "Noncovered Care"? Any* level of care less intensive than extended care. Formerly, all noncovered care was referred to as "custodial care."

D. *What are the responsibilities of the attending physician and hospital?* The attending physician customarily plans in advance for the needs of his patient including, where appropriate, transfer from a hospital into an extended care facility. The hospital can and should aid in this planning process. Following is the preferred approach:

1. While the patient is in the hospital, a medical information summary should be prepared including the physician's orders for the patient's care in the facility, a profile of the patient's condition, and the services expected to be needed.
2. This summary should be submitted by the hospital to the facility prior to the time of the transfer of the patient.
3. If the summary is to be incorporated into a form, it may be incorporated into a standard form agreed to by the intermediary and the providers of service.

When this information has not been submitted in advance as indicated above, alternate approaches should be used to supply the needed information. We have been advised by the medical profession that good patient care requires the extended care facility to have available by the time of admission, in writing, the required patient care information. The written data may in some instances be preceded by telephone orders which would make possible advance preparations for care.

E. *What procedures should extended care facilities follow?* If adequate information is received, requiring it to furnish skilled services which are obviosuly covered care, no special action need be taken by the ECF. However, if the ECF thinks there could be reasonable doubt upon admission that the care is covered (or if, during the ECF stay, there is a significant change in the level of care), it should take these steps:

1. Complete a "medical information form" or equivalent (by the ECF's director of nursing services, the charge nurse, or a physician) based on the attending physician's orders and the transfer hospital's medical information. A copy of the hospital's medical information summary or the attending physician's orders would generally be an acceptable substitute.
2. Forward this medical information to the intermediary within 48 hours of admission or when a change in the level of care raises doubts as to coverage.
3. The utilization review committee should review promptly each admission where there is a question of whether the required level of care is covered to help screen out claims for care which are obviously noncovered.
4. To minimize the need for recontact by the intermediary, the utilization review committee should record the skilled services it considers to justify extended care on a medical information or other form, and the information should be included with any submission of utilization review committee findings by the extended care facility to the intermediary.

F. *What actions will the intermediary take in its determinations?*

1. Process medical information forms promptly and inform the ECF of the results.
2. Where the care is deemed covered, reimburse the ECF as long as the patient requires that level of care, up to the maximum benefits.

(Continued on Page 599)



"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests; they all have to measure up to the same standards. Therefore, all registered nurses are alike.

That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more demanding. In fact, there are at least *nine specific differences* involving purity, potency and speed of tablet disintegration. These Bayer® standards result in significant product benefits including gentleness to the stomach. and product stability that enables Bayer tablets to *stay* strong and gentle until they are taken.

So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.



This advertisement for TAO® (triacetyloleandomycin), published at the request of the Food and Drug Administration, replaces a recent one which the FDA regards as misleading.

The advertisement headlined "new evidence for TAO . . ." and emphasized that the drug is "for the frequently seen respiratory infection in the office and for a problem pathogen* in the hospital. *Staphylococcus aureus."

We emphasize that triacetyloleandomycin is to be used only for acute, severe bacterial infections where adequate sensitivity testing has demonstrated susceptibility to this drug and resistance to other less toxic agents. In view of the possible, but reversible, jaundice and hepatotoxicity of this drug, other less toxic agents should be used unless the organism is resistant to those agents, or in those cases where hypersensitivity precludes their use.

TAO is contraindicated in preexisting liver disease or dysfunction, and in individuals who have shown hypersensitivity to the drug.

The advertisement emphasized that no tooth staining has been reported after ten years of use of this antibiotic. The Food and Drug Administration regards this claim as an implied comparison suggesting that triacetyloleandomycin and tetracycline have a similar antibacterial spectrum of effectiveness, and that TAO has less toxic potential. Any such implication is not intended and, of course, would be invalid.

The advertisement referred to a research study in which patients were given triacetyloleandomycin prior to determining the susceptibility of the offending organism. Any suggestion that triacetyloleandomycin be used clinically without first determining susceptibility of the offending organism should be disregarded.



J. B. ROERIG DIVISION
CHAS. PFIZER & CO., INC.
235 EAST 42nd STREET
NEW YORK, N.Y. 10017

TAO®(triacetyloleandomycin)
Brief Summary

INDICATIONS: Include streptococci, staphylococci, pneumococci and gonococci. Recommended for acute, severe infections where adequate sensitivity testing has demonstrated susceptibility to this antibiotic and resistance to less toxic agents.

CONTRAINDICATIONS: Contraindicated in pre-existing liver disease or dysfunction, and in individuals hypersensitive to the drug.

PRECAUTIONS: CAUTION: USE OF THIS DRUG MAY PRODUCE ALTERATIONS IN LIVER FUNCTION TESTS AND JAUNDICE. CLINICAL EXPERIENCE AVAILABLE THUS FAR INDICATES THAT THESE LIVER CHANGES WERE REVERSIBLE FOLLOWING DISCONTINUATION OF THE DRUG.

Not recommended for prophylaxis or in the treatment of infectious processes, which may require more than ten days continuous therapy. In view of the possible hepatotoxicity of this drug when therapy beyond ten days proves necessary, other less toxic agents should be used. If clinical judgment dictates continuation of therapy for longer periods, serial monitoring of liver profile is recommended, and the drug should be discontinued at the first evidence of any form of liver abnormality. When treating gonorrhea in which lesions of primary or secondary syphilis are suspected, proper diagnostic procedures, including dark-field examinations, should be followed. In other cases in which concomitant syphilis is suspected, monthly serological tests should be made for at least four months. When used in streptococcal infections, therapy should be continued for ten days to prevent the development of rheumatic fever or glomerulonephritis. The use of antibiotics may occasionally permit overgrowth of nonsusceptible organisms. A resistant infection or superinfection requires reevaluation of the patient's therapy. In the event such occurs with this drug the medication should be discontinued, and specific antibacterial and supportive therapy instituted.

ADVERSE REACTIONS: Although reactions of an allergic nature are infrequent and seldom severe, those of the anaphylactoid type have occurred on rare occasions.

J. B. ROERIG DIVISION
CHAS. PFIZER & CO., INC.
235 EAST 42nd STREET
NEW YORK, N.Y. 10017

EXTENDED CARE RULES

(Concluded from Page 596)

3. Where the ECF is conscientiously carrying out the procedures listed above in each questionable case, the intermediary will presume that a case with unclear evidence is covered up to the time when the ECF is advised that additional evidence and evaluation by the utilization review committee is required. However, if the ECF has not been following the recommended procedure for questionable cases described above in (E), retroactive denial may be made back to the date of admission or any subsequent date established by the evidence.

*U.S. Department of Health, Education, and Welfare. Social Security Administration, July 1968.

DID YOU KNOW?

- Insurance policies covering accident or illness during a trip provide from $500 to $5,000 in medical benefits, and principle sums of from $5,000 to $50,000 for death or dismemberment — depending on the provisions of the policy.

- Travelers who want protection against accidents only for a given trip can obtain short-term "special risk" policies covering trips ranging from one to 180 days.

- A traveler who is injured or becomes ill while abroad, and is uncertain about local medical standards, should contact the nearest U.S. Embassy or consulate.

- Don't wait for an emergency to familiarize yourself with your health insurance policy. Read it, review it, keep it in a safe place, and discuss its features with your family.

- Fifteen insurance companies are responsible for paying Medicare benefits to two-fifths of the nation's "Part B" recipients.

. . . Health Insurance Institute

* * *

AGED ENTERING U.S. HOSPITALS AT 1:5 RATIO

One out of every five patients who entered U.S. general hospitals during the first quarter of this year was 65 years of age or older, the Health Insurance Institute said recently.

These elderly Americans also accounted for one out of three days spent by patients in hospitals during this period.

As for cost, a study of the American Hospital Association covering 656 hospitals, reveals that the average cost of care in the nation's general hospitals is up to $61 a day.

Book Reviews . . .

PRACTICAL PAEDIATRIC PROBLEMS, by James H. Hutchison, M.D. Second Edition. Year Book Medical Publishers, Inc., Chicago, 1967. $11.50.

Doctor Hutchison is Professor at the University of Glasgow. He had a long experience in private practice before being "immured in the 'Ivory Tower' of a University Chair." Most of the new books in pediatrics are written by a large number of contributors who are specialists in the various subspecialties. It is refreshing to read a book which is written by one man and based on his experience alone. Any pediatrician will enjoy comparing notes with him.

Picking out a few statements — "It is essential to realize that 40 per cent of all cases of hydrocephalus in infancy undergo spontaneous arrest." "The author is of the opinion that with the exception of rheumatic fever and rheumatoid arthritis aspirin should not be prescribed for infants and children." "It is widely used by mothers for real or imaginary ills of their offspring and its dangers are poorly appreciated by parents." When salicylate poisoning is suspected, "the urine should be tested, after boiling, with ferric chloride solution . . . a purple colour reaction demands the immediate estimation of the serum salicylate level." A negative test rules out salicylate poisoning. "Oxygen should never be given in the absence of respiratory distress or cyanosis." "The fact that enuresis has been left until the last few pages of this book could well reflect the autthor's lack of satisfaction with his own attempts to deal with it in practice."

This is an enjoyable book.

H. G. Calder, M.D.

* * *

EDUCATIONAL TOOLS FOR HEALTH PERSONNEL by Muriel Bliss Wilbur, M.P.H., Ph.D., The Macmillan Company, New York, 1968. $7.95

Doctor Wilbur has done an excellent job in both organization and content of her book. There is much valuable material which can be utilized to advantage by all disciplines in the health field.

The section on meetings is especially well-done and is written in a refreshingly simple style which should be appealing and informative to even the most sophisticated reader. She handles her subject with the expertise derived from a wealth of experience.

The practicing physician of today, who is such an integral and vital part of community life, will profit a great deal by learning to use the educational tools so aptly described in this book. As Ira Hiscock of Yale University has stated in the foreword, "Doctor Wilbur, whose educational preparation for her various daily experiences is superior, illustrates her knowledge and understanding of people. More than this, however, the industrious author indicates, by text and references, the importance and even urgency of wider citizen participation in community health affairs."

E. Franklin Hall, M.D.

* * *

DEVELOPMENT OF THE LUNG. Ciba Foundation Symposium, Edited by A. V. S. de Reuck and Ruth Porter. Little, Brown and Company, Boston, 1967. $13.00.

EGG IMPLANTATION. Ciba Foundation Study Group No. 23, Edited by G. E. W. Walstenholme and Maeve O'Connor. Little, Brown and Company, Boston, 1966. $3.50

EFFECTS OF EXTERNAL STIMULI ON REPRODUCTION. Ciba Foundation Study Group No. 26, Edited by G. E. W. Wolstenholme and Maeve O'Connor. In Honour of Professor B. Zondek. Litle, Brown and Company, Boston, 1967. $3.50

These three volumes are a part of a large series of Symposia sponsored by the CIBA Foundation. This British educational and scientific charity founded in 1947 sponsors an international center where scientists are encouraged to conduct symposia and study groups which last one to four days, and of which there are five or six each year.

The first book, *Development of the Lung*, is the result of a three-day symposium held November 1-3, 1965. The members of the panel included pediatricians, physiologists, physical chemists, and zoologists. This was done in order to widen the scientific participation on problems of the lung, particularly developmental pulmonary physiology. A major portion of the book is devoted to comparative physiology and only a small portion to human clinical problems.

The book is divided into five sections. The first section on the phylogeny of the lung includes discussions on gas transport from the external environment to the cell, variations of chemical potential with gas transfer in water-breathing dogs, and the quantitative aspects of vertebrate gas exchange.

The second section on the ontogeny of the lung includes the embryology and postnatal growth of the lung and pulmonary gas-exchange capacity.

(Continued on Page 601)

ACHROMYCIN® WORKS HERE
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IN 3 HOURS!

a proved, accurate thyroid function test[1-4]

T3 (1-triiodothyronine test for determining the thyrobinding index of serum or plasma)

Unaffected by high iodine diets or any iodine the patient may be taking therapeutically or diagnostically (opaque dyes).

Only 2 ml of patient's serum or plasma is required. The patient does not have to take or use anything. The I^{131} is used in **vitro.**

Stat orders impeccably executed.

Economical because of time-and-labor-saving equipment used.

1. Scholer, J. F.: J. Nuclear Med. 3:41, 1962. 2. Foeckler, F., et al., Paper, Meet. Soc. Nuclear Med., June 1962. 3. Sodee, B.: Paper, Meet. Soc. Nuclear Med., June 1962. 4. Nordyke, A. M., et al.: Paper, Meet. Soc. Nuclear Med., June 1962.

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Beautiful Five Bedroom Home

3½ Baths, Large Panelled Family Room with raised hearth Fireplace, Large living room, Sun room, Breakfast room, large Recreation room. 13 rooms plus lots of extra space in **dry** cellar and walk-up attic. **Two** large bow windows, intercom, loft in garage, two zone forced hot water gas heat (very low bills), one acre lot with beautiful tall trees and exclusive neighborhood, bordering R. I. Country Club property (2 sides). View of Narragansett Bay and Echo Lake. Many other extras. Built 1960.

Firm $85,000 through your broker or ours. For **direct** negotiation, phone me at my home (245-2755) nights or weekends or my office, R. A. DEROSIER AGENCY, 54 Custom House Street, Providence, Rhode Island 02903.

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Easy on the Mother
Tablets & Elixir
For Iron Deficiency Anemia

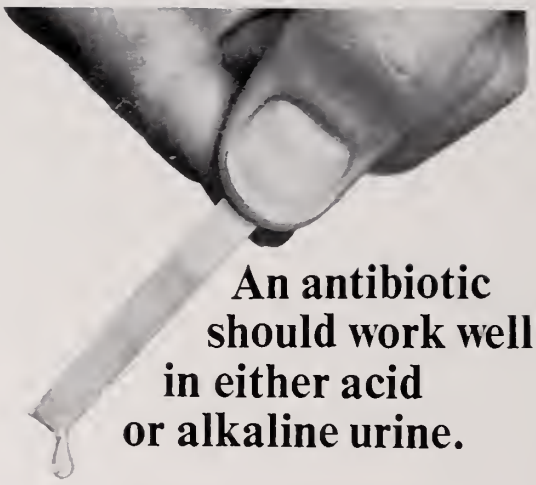
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FAMOUS Fergon®
brand of FERROUS GLUCONATE



Wherever you go, forget your telephone calls. We'll take them for you, day or night.

MEDICAL BUREAU
of the
Providence Medical Association



An antibiotic should work well in either acid or alkaline urine.

It isn't always necessary to adjust urinary pH in treating G.U. infections.

Not when the causative organism is a strain sensitive to DECLOMYCIN® Demethylchlortetracycline, as is often the case.

DECLOMYCIN remains stable and active in either acid or alkaline urine. So there's no need to acidify the urine to keep the antibiotic at work.

Why match the urine to the antibiotic...when you can match the antibiotic to the urine...by prescribing DECLOMYCIN. A b.i.d. dosage makes therapy convenient for your patient.

Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system – anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin – maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney – rise in BUN, apparently dose-related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions–urticaria, angioneurotic edema, anaphylaxis. Teeth – dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; Tablets: film coated – 300 mg, 150 mg and 75 mg of demethylchlortetracycline HCl.

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Alcohol, 1.4%

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DEMULCENT	●	●	●	●
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ANTIHISTAMINE		●		
LONG-ACTING (6-8 HOURS)			●	
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Indications: Streptococcus, pneumococcus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K® (Potassium Phenoxymethyl Penicillin Tablets, U.S.P.), 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K® (potassium phenoxymethyl penicillin, Lilly), Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567A] 800197

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TRIGEMINAL NEURALGIA — RESPONSE TO TREATMENT WITH TEGRETOL (G-32883)*

Initial Results Indicate Effectiveness in Tic Douloureux.

WALTER C. COTTER, M.D., *of Providence, R.I.*
Associate Surgeon, Department of Neurosurgery, Rhode Island Hospital, Providence.

Tegretol® appears to be a valuable drug in the treatment of tic douloureux. Because of the variable course of the disease, the long-term efficacy of the drug can only be assessed after a few more years of clinical trial.

Since the initial report[1] on the effectiveness of Tegretol® in the treatment of trigeminal neuralgia by S. Blom of the Department of Neurology, University Hospital, Uppsala, Sweden, appeared in 1962, considerable amount of interest in the medical treatment of tic douloureux has again been aroused.

This paper reports on 63 cases of trigeminal neuralgia, treated over a two-year period. For a disease such as trigeminal neuralgia with its tendency for spontaneous remission, it must be admitted that this is a short period of trial. However, to date the results have been very encouraging. In a subsequent report the efficacy of Tegretol® on atypical facial pain will be reported. Here the results are far less encouraging.

THE DRUG

The drug** marketed under the trade name of Tegretol,® is an iminodibenzyl derivative not related to the hydantoins, but chemically related to imipramine (Tofranil®), and is supplied in tablets containing 200 mg. of active agent. It is a potent anticonvulsant drug which, in the course of investigation by the manufacturer, was used to treat trigeminal neuralgia because of the occasional beneficial effect on trigeminal neuralgia treated with diphenylhydantoin, another anticonvulsant, but not related to imipramine. Both drugs delay orthodromic transmission across synapses, and this is probably the etiologic reason for their efficacy in treatment of tic douloureux.

*Presented before the New England Neurosurgical Society, June, 1968.

**Manufactured by Geigy Chemical Corp.

SELECTION OF CASES

The cases tested fall into the usual category of patients with trigeminal neuralgia, i.e., persons in late middle age and the elderly predominating, and females predominating over males. No cases of fifth nerve pain related to other known disease are included in this study. A protocol for administration of the drug was given to each patient. Each patient was advised to start with four pills a day. If pain relief was obtained with four pills a day, then the patient was to decrease the dosage to three pills a day. The decreasing dosage plan was then followed in such manner that, as long as the patient was pain free, the daily dose was decreased by ½ pill a day.

Any patient who developed marked dizziness, unsteadiness, or nausea on four pills a day and still had pain was told to stop the medication. If the patient was dizzy, unsteady, or had nausea, but was pain free, he was instructed to decrease the dosage according to schedule. On four pills a day, most patients did have, to varying degrees, the toxic symptoms mentioned. These symptoms in nearly all cases disappeared with three pills a day, and no toxic symptoms were seen at two pills a day except as mentioned below under "Failures." Regardless of absence of side effects, no patients have been carried on more than four pills a day.

RESULTS

Good Results: Classified as having a good result were those patients who experienced very little or no discomfort at any time while on the drug, but suffered recurrence of severe pain when the drug dosage was decreased below effective threshhold or after total withdrawal, and then experienced a second remission of pain after increasing the drug dosage or reinstituting drug therapy at previously effective dosage. There were 39 of 63 cases treated in this classification.

Failures: In eight patients who had no relief

(Continued on next page)

of pain with up to four pills a day, the drug therapy was stopped. In six patients, dosage levels required to produce relief were associated with nausea, vomiting, and dizziness of such a degree that the drug therapy had to be stopped. Six patients had good pain relief, but medication had to be stopped because of severe dermatitis. In one case this occurred within 24 hours of starting the medication. It rapidly subsided upon withdrawal of the medication. An alcohol injection produced temporary relief, but when the pain returned months later, a second course of Tegretol® was tried, and within a few hours after the first pill was taken the patient again experienced severe dermatitis with periorbital edema. The drug was stopped. The alcohol injection was repeated with relief of symptoms. There were four cases in whom the drug initially was of great benefit, but in whom pain subsequently recurred; even when the drug dosage was increased to four pills a day, pain persisted. In this last group of patients, one had been essentially pain free for 15 months before the controlling effect of Tegretol® ceased, two had been under good control for four months and then escaped from the effect of Tegretol,® and one had been under good control for a year before escaping from the effect of Tegretol.® Three of these patients have had subsequent surgery with good relief. The fourth patient initially had had good relief with diphenylhydantoin (Dilantin®). She eventually escaped from the Dilantin® effect, but obtained immediate relief with Tegretol® and was pain free for 11 months. She then escaped from the effect of Tegretol,® but had a good response on re-instituting Dilantin.®

Multiple hemoglobin, white blood count, urinalysis, alkaline phosphatase, and SGOT determinations were carried out on the 63 patients. No abnormalities were found.

DISCUSSION

Tegretol® appears to relieve the pain of tic douloureux in about 60 per cent of cases without causing adverse symptoms. A small percentage of cases may later escape from the beneficial effects of Tegretol;® despite increasing dosages, pain persists and other methods of treatment are necessary. Escape from the beneficial effect of Tegretol® may become more frequent as the cases are observed over a longer period time.

Skin rashes occur very early and do not appear to be dose-related. Dizziness, nausea, and vomiting are dose-related and vary in severity from individual to individual. For the first day or two nearly all of the patients on four pills a day feel unsteady and have blurred vision and nausea. This appears to be dose-related and is unlikely to occur if the dosage is three pills or less a day.

TABLE 1

Good Response	39
Initial Good Response, Later Failure	4
Total Failure:	
No relief of pain	8
Toxicity	6
Dermatitis	6
Total Cases	63

SUMMARY

Sixty-three cases of tic douloureux were treated with Tegretol® during a study of two years' duration. The results are summarized in Table 1.

REFERENCE

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The cooperation of Drs. Barry, Bernstein, Erculei, Stoll, McOsker and Welch was invaluable in contributing patients for this study. The aid of Mrs. Marilyn Nastari in compiling patient information is deeply appreciated.

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The Causes of Prolonged Q-T Intervals in the Electrocardiogram — A Study of 30 Patients With Autopsy Findings

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Hypocalcemia Resulting From Several Disorders, Drugs, and Organic Heart Disease Among Causes.

The measurement of the Q-T interval of the electrocardiogram in the diagnosis of electrolyte imbalance and during quinidine therapy may be of distinct value. However, some aspects of the Q-T interval are controversial. Taran and Szilagyi,[1] and Gittleman et al.[2] found the Q-T interval to be prolonged in acute myocarditis, whereas Craige and associates[3] reported 29 patients with fatal pancarditis who had Q-T intervals within the normal range. Tung[4] noted the Q-T interval to be normal in patients with massive tuberculous pericardial effusion with cardiac tamponade and sug gested the use of the Q-T measurement as a guide in differentiating cardiac dilatation from pericardial effusion. According to White and colleagues[5,6] and Bellet and Finkelstein[7] measurements of the Q-T intervals are only occasionally helpful diagnostically.

In this paper, we report a study of 30 patients in whom various factors responsible for the prolongation of the Q-T interval have been correlated with the clinical, laboratory, and autopsy findings. In an additional 20 patients with a normal Q-T interval and no significant clinical disease, the relationship between the heart rate, the length of the S-T segment, and the Q-T interval has been analysed.

MATERIALS AND METHODS

In the files of our hospital 30 patients were found who had autopsy examinations and prolonged Q-T intervals (i.e. Q-Tc). The measurements of the Q-T interval (See Fig. 1) and its components, Q-oT, Q-aT and length of S-T segment, were made mainly as suggested by Lepeschkin and Surawicz.[8,9] Doubtful electrocardiograms, as well as tracings showing a notch near the peak or ascending or descending limb of the T wave (Fig. 2) were discarded from this study as it is not possible in our retrospective study to have simultaneous recordings of phonocardiograms and electrocardiograms to differentiate T and U waves. The Q-T intervals of all cases were measured independently by both authors with the help of a magnifying lens. The variation in our measurements of the Q-T interval did not exceed 0.02 second. We noted that the length of the S-T segment in particular may change significantly from one lead to another. Hence, subsequently the Q-T interval and its components were measured in one additional lead (one limb lead and one precordial lead), choosing those which showed a distinct beginning and end of the T wave, one of the two Q-T measurements being the longest of the entire 12 lead record. For the purpose of this study the upper limit of normal of the Q-T interval, for a particular heart rate and sex, was determined by the table used at the Boston City Hospital. This table, so far as we can ascertain, was based on the table of Ashman and Hull[10] and is quite similar, except for slightly longer upper limits of normal for the Q-T intervals with heart rates of 60 per minute or less. In this paper only those cases are presented who showed a prolongation of the Q-T interval beyond the upper limits of normal of 0.04 second or more, in order to eliminate borderline or doubtful cases.

The majority of our cases had reports of the serum electrolytes Na, K, Cl, and CO_2 on the same day as the electrocardiograms. However, levels of serum electrolytes were considered relevant if drawn within 24 hours of the electrocardiogram. The serum levels of calcium and magnesium were noted if the intervening period did not exceed 48 hours.

The measurements of the Q-T intervals, the probable causes of prolongation, the levels of the concerned serum ions, and the autopsy findings are shown in Table 1. Only the necropsy findings of the heart and other organs of prime interest are shown. Information about the parathyroids was often not available.

(Continued on next page)

From the Heart Station, Rhode Island Hospital, Providence, R. I.

In 20 other patients with a normal Q-T interval and no significant clinical disease, Q-oT, Q-aT and the length of the S-T segment were measured, and the S-T segment was expressed as per cent of the measured Q-T interval in two leads (one limb lead and one precordial lead). Among these 20 patients, 6 patients had heart rates of 100 or over (up to 111 per minute), 4 patients had heart rates ranging from 90 to 100, and the remaining 10 patients had heart rates of 60 to 90 per minute. The S-T segment was 40 per cent or more of the measured Q-T interval with the heart rates 60 to 90 per minute in 2 patients in both the leads and in 5 additional patients in one of the two leads. In none of the 9 patients with the heart rates over 90 per minute was the S-T segment 40 per cent of the measured Q-T interval. This suggests that the normal shortening of the Q-T interval with rapid heart rates is mainly due to shortening of the S-T segment. In none of these 20 patients did the S-T segment measure more than 49 per cent of the total Q-T interval.

DISCUSSION

In our study, hypocalcemia was the commonest cause of prolonged Q-T intervals, 13 out of 30 patients. These 13 patients consisted of 11 with uremia, 1 with acute pancreatitis, and 1 with primary hypoparathyroidism (Table 1). Hypocalce-

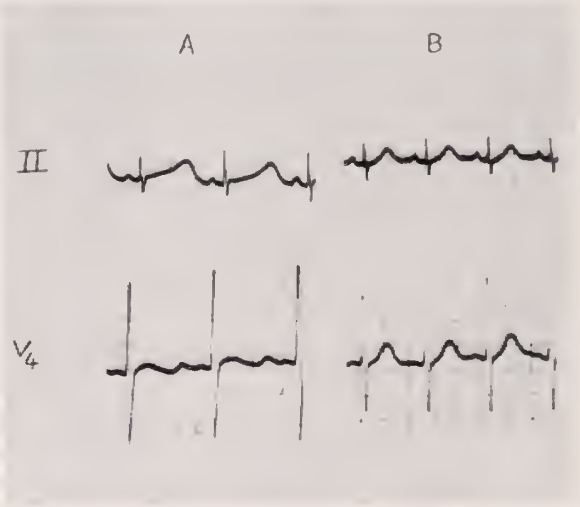


Fig. 2. The ECG tracings are from a 2-year-old boy with salicylate poisoning. The strips A were recorded on 2.27.1962. The serum electrolytes on this date were as follows: Na=145 meq/L, K=2.7 meq/L, Cl=86 meq/L, CO2=16 meq/L and Ca=4.6 meq/L. Note the merging of the T and U waves. The Q-U intervals in lead II and V4 measure, respectively, 0.50 and 0.52 seconds. These strips illustrate the difficulties in measuring the Q-T interval due to merging of T and U waves. The patient was treated with hemodialysis and 4 days later, when section B was recorded showing a normal Q-T interval and absent U waves, the serum potassium level was 3.8 meq/L.

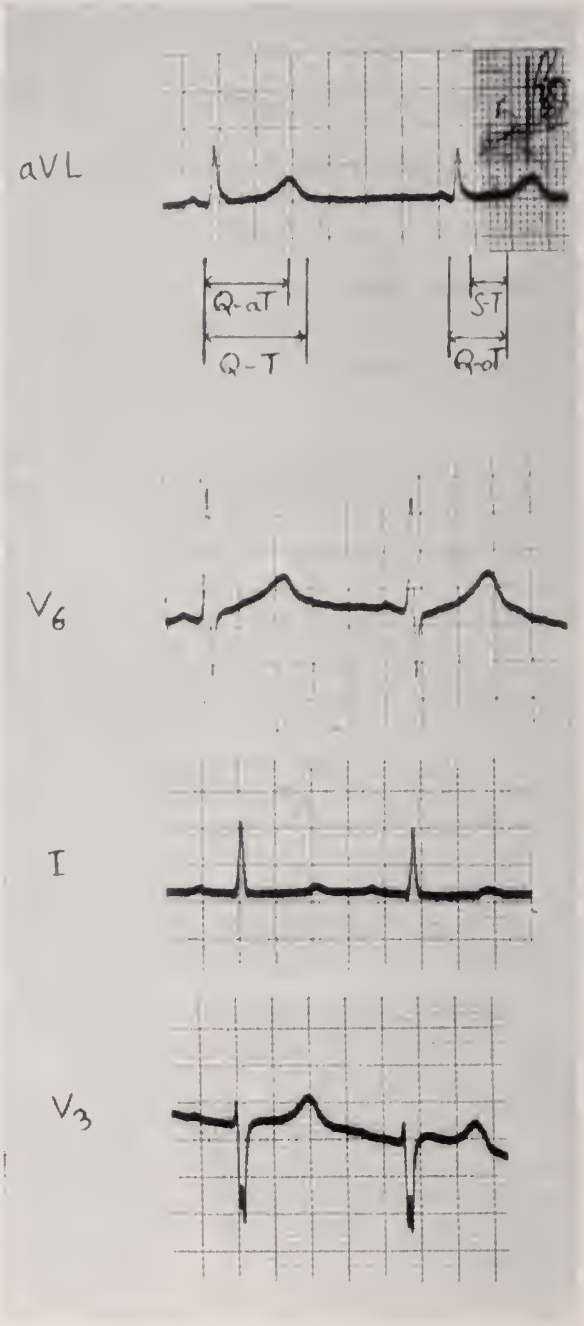


Fig. 1. Leads aVL and V6 are from case no. 19. Lead aVL illustrates the measurements of Q-T (measured from beginning of QRS to the end of T wave), Q-aT (from beginning of QRS to the apex of T wave), Q-oT (from beginning of QRS to beginning of T wave), and S-T segment (from end of QRS to beginning of T wave). The intervals, Q-T, Q-aT, Q-oT and S-T segment, measure, respectively, in lead aVL, 0.54, 0.44, 0.30 and 0.20 seconds. Note that in aVL and V6 the Q-T prolongation is mainly due to broad T waves. The patient had subarachnoid hemorrhage due to rupture of a congenital berry aneurysm.

Leads I and V3 are from case no. 7 Note the prolonged Q-T interval with a long S-T segment. The patient had uremia due to chronic glomerulonephritis with a serum calcium level of 2.4 meq/L.

mia has its influence on the Q-T duration primarily by lengthening the S-T segment, resulting in prolongation of Q-oT, Q-aT and Q-T intervals.[11,12] In the hypocalcemic patients of the present series, the S-T segment was 50 per cent or more of the measured Q-T intervals in one of the two leads in 6 cases and in both the leads in 1 additional case; the S-T segment was 40 to 50 per cent in both the leads in 1 other case and in one of the two leads in 2 additional cases. In the 3 patients in this group in whom the S-T segment measured less than 40 per cent of the total Q-T interval in both leads, the heart rate was 102 per minute or faster, suggesting that with hypocalcemia (as was previously noted in the 20 normal patients) at higher rates the relative prolongation of the S-T segment is less frequent. Six patients in the hypocalcemia group were receiving digitalis, which may shorten the S-T segment and the Q-T interval. Digitalis therapy, however, in these patients did not mask the prolongation of Q-T interval due to low serum calcium. The mechanism of the prolongation of the S-T segment during low concentrations of calcium is assumed to be due to the increased duration of Phase 2 of the ventricular action potential.[13] Hypocalcemia has no effect on the duration of the T wave,[12] but may slightly decrease the QRS duration.[13] The correlation between the electrocardiogram and the level of serum calcium is not well established. The Q-T interval may remain normal in spite of hypocalcemia.[14] Probably the electrocardiogram is affected by the concentration of ionized rather than the total serum calcium.[13,14] In the remaining patient with uremia and 3 patients with acute pancreatitis, although the serum calcium levels were unavailable, probably hypocalcemia was the cause of the prolonged Q-T interval.

Among the remaining 13 patients in this series, 3 had subarachnoid hemorrhage. The Q-T interval in this condition is prolonged because of broad T waves which usually become inverted.[15,16] In these 3 patients the S-T segment was 40 per cent or less of the total Q-T interval in spite of slow heart rates. Prominent U waves may also occur. These electrocardiographic changes in intracranial hemorrhage may be due to damage of area 13 of the cerebral cortex, raised intracranial pressure, or various autonomic reflexes.[15,16]

One of our patients had prolonged Q-T duration while on quinidine and Pronestyl® therapy. These drugs affect the Q-T interval mainly by increasing the QRS duration. Another patient showed a prolongation of the Q-T interval on the basis of acute rheumatic myocarditis. The cause of the prolonged Q-T intervals in the remaining 8 cases is not clear, but was associated with recent myocardial infarction in 2, multiple pulmonary emboli in 1, myocardial fibrosis and hypertensive cardiovascular disease in 1, cerebral infarction in 1, myocardial ischaemia in 1 and the presence of less than a normal number of parathyroids at autopsy in 2. In none of these 8 patients was a serum calcium determination available.

It is to be noted that in our study the constructed groups are somewhat arbitrary, as a definite case for Q-T prolongation in a particular case could not always be established with certainty. In some cases multiple factors may be responsible. No correlation could be established between the structural heart disease present and the prolongation of the Q-T interval.

SUMMARY

Probable causes of prolonged Q-T intervals in 30 patients with autopsy findings are analysed. The major cause of Q-T prolongation was hypocalcemia (at least 13 out of 30 cases). An S-T segment measuring 50 per cent or more of the total Q-T interval at slow heart rates and 40 per cent or more at rapid heart rates is suggestive of hypocalcemia. Uremia was the commonest cause of hypocalcemia. Cases showing prolongation of the Q-T interval on the basis of acute pancreatitis, hypoparathyroidism, quinidine and Pronestyl® therapy, subarachnoid hemorrhage, and rheumatic myocarditis were also encountered.

In 20 other patients with normal Q-T intervals and no significant clinical disease, it became apparent that the normal shortening of the Q-T interval with rapid heart rates is mainly due to shortening of the S-T segment.

(Tables on next three pages)

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(Continued on Page 614)

Serial No.	Age & Sex	Heart rate (upper limit of normal Q-Tc interval)	Lead	Q-T interval	S-T segment	(S-T segment expressed as per cent of measured Q-T)	Treatment with Digitalis.	Autopsy findings & probable cause of prolonged Q-T interval.
UREMIA								
1)	32F	77(40)	II	43	24	(51)	No	Autopsy — coronary atherosclerosis 2+, moderate myocardial fibrosis; chronic pyelonephritis.
			V2	44	16	(36)		HCVD, serum Ca 3-4, CO2 10.
2)	52F	68(43)	I	53	28	(53)	No	Autopsy — Coronary atherosclerosis 1+, fibrinous pericarditis, interstitial myocarditis, chronic pyelonephritis.
			V4	52	22	(42.4)		Serum calcium 2.2, CO2 17.
3)	37F	70(42)	III	47	25	(53)	Yes	Autopsy — Coronary atherosclerosis 1+, fibrinous pericarditis, interstitial myocarditis, glomerulonephritis, chronic pyelonephritis.
			V3	48	18	(37.5)		HCVD, serum Ca. 2.7, CO2 14.
4)	48M	108(32)	V2	36	14	(39)	Yes	Autopsy — Coronary atherosclerosis 0, left ventricular hypertrophy, fibrinous pericarditis, acute and chronic pyelonephritis.
			[1]The end of T is not clear in limb leads.					HCVD, serum Ca. 2.8, CO2 9.
5)	25F	110(34)	I	38	14	(37)	No	Autopsy — Heart negative, chronic glomerulonephritis; parathyroids were exclusively composed of "Wasserhelle cells." Serum Ca. 3.1, C02 10.
			V3	39	10	(26)		
6)	56F	80(40)	AVL	47	20	(42.6)	No	Autopsy — slight coronary atherosclerosis, fibrinous pericarditis, acute hepatic necrosis, cholemic nephrosis.
			V4	48	12	(25)		Serum Ca. 3.7. CO2 11.
7)	46M	65(42)	I	50	32	(64)	Yes	Autopsy—Coronary atherosclerosis 3+, pericarditis, focal myocarditis, healed mitral valvulitis, chronic glomerulonephritis.
			V3	50	20	(40)		HCVD, Ca. 2.4, CO2 15.
8)	51F	98(36)	I	40	20	(50)	No	Autopsy — Heart negative; congenital polycystic kidneys.
			V5	41	18	(44)		Serum Ca. 2.5, CO2 22.
9)	65M	87(36)	I	40	22	(55)	Yes	Autopsy—Coronary atherosclerosis 1+, left ventricular hypertrophy, fibrinous pericarditis, focal myocardial fibrosis, chronic pyelonephritis.
			V4	40	17	(42.5)		Serum, Ca. 3.2, CO2 9.
10)	58M	95(35)	I	42	13	(43)	Yes	Autopsy — Coronary atherosclerosis 0, left ventricular hypertrophy, fibrinous pericarditis, marked pyelonephritis.
			V3	40	15	(37.5)		Serum, Ca. 2.5, CO2 8.
11)	61M	102(34)	I	41	16	(39)	No	Autopsy — Coronary atherosclerosis 0, biventricular hypertrophy, fibrinous pericarditis, chronic lobular glomerulonephritis, only two parathyroids obtained (both Normal).
			V4	41	14	(34)		Serum Ca. 2.4, CO2 10.

Serial No.	Age & Sex	Heart rate (upper limit of normal Q-Tc interval)	Lead	Q-T interval	S-T segment	(S-T segment expressed as per cent of measured Q-T)	Treatment with Digitalis.	Autopsy findings & probable cause of prolonged Q-T interval.
12)	69M	75(39)	AVL V4	48 46	20 12	(42) (26)	No	Autopsy—Coronary atherosclerosis 1+, interstitial myocarditis, left ventricular hypertrophy, bilateral pulmonary infarcts, right pheochromocytoma, acute and chronic pyelonephritis. HCVD.
Acute Pancreatic Disease								
13)	76M	48(49)	II V1	61 58	32 36	(52) (62)	No	Autopsy—coronary atherosclerosis 2+, slight myocardial fibrosis, fat necrosis of pancreas, only two parathyroids found with an increased number of chief cells. Serum Ca. 3.6.
14)	40M	97(34)	V5	44	14	(32)	No	Autopsy — Coronary atherosclerosis 0, cirrhosis of liver, acute pancreatitis. End of T is not distinct in limb leads.
15)	53M	103(33)	II	40	12	(30)	No	Autopsy — Coronary atherosclerosis 0, left ventricular hypertrophy, Laennec's cirrhosis with bile nephrosis, acute pancreatic necrosis. T-wave not clear in precordial leads.
16)	72M	52(47)	II	60	37	(62)	No	Autopsy—Coronary atherosclerosis 2+, right ventricular hypertrophy, cirrhosis of liver, chronic pyelitis, acute hemorrhagic pancreatitis. Ventricular extrasystolic bigeminy in precordial leads.
Hypoparathyroidism								
17)	50M	94(35)	AVF V4	50 52	22 24	(44) (45)	Yes	Autopsy — Coronary atherosclerosis 0, right ventricle dilated, parathyroid aplasia, pituitary smaller than normal, pancreas focal fibrosis. Serum Ca. 2.2, Mg. 1.48.
Intracranial Pathology								
18)	77M	55(45)	I V1	54 56	20 22	(37) (39.3)		Autopsy—Coronary atherosclerosis 1+, left ventricular hypertrophy, skull fracture with subarachnoid bleeding and laceration of brain.
19)	57M	47(49)	AVL V6	54 55	20 22	(37) 40	No	Autopsy — Coronary atherosclerosis 0-1+, bronchogenic carcinoma with metastases, rupture of congenital berry aneurysm, focal, chronic pancreatitis. Serum Ca. 3.9.
20)	60M	75(39)	V2	43	8	(19)	No	Autopsy — Coronary atherosclerosis 0, left ventricular hypertrophy, intracerebral (rt. temporal) and subarachnoid hemorrhage.
Drugs								
21)	36M	73(39)	III V6	52 56	20 16	(38.4) (29)	No	Autopsy — Old anterior myocardial infarction, occlusion of left anterior descending. Quinidine and Pronestyl.
Rheumatic Fever								
22)	10M	160(27)	II	32	7	(22)	No	Autopsy — Rheumatic pancarditis (acute myocarditis, pericarditis and vegetations on tricuspid, mitral and aortic valves). End of T is not distinct in precordial leads.

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Serial No.	Age & Sex	Heart rate (upper limit of normal Q-Tc interval)	Lead	Q-T interval	S-T segment	(S-T segment expressed as per cent of measured Q-T)	Treatment with Digitalis.	Autopsy findings & probable cause of prolonged Q-T interval.
Miscellaneous								
23)	61M	92(35)	II	40	17	(42.5)	No	Autopsy — Small healing myocardial infarction, cirrhosis of liver. Serum K 2.9.
			V4	40	15	(37.6)		
24)	62M	100(34)	II	36	15	(42)	No	Autopsy — Recent posterior myocardial infarction, adenocarcinoma of stomach.
			V5	38	13	(34)		
25)	58M	86(36)	V3	40	18	(45)	No	Autopsy—Coronary atherosclerosis 3+ to 4+, moderate myocardial fibrosis, Laennec's cirrhosis, pancreatic fat necrosis, bronchopneumonia. Serum K 6.6, CO2 13, HCVD.
		End of T-wave is not distinct in limb leads.						
26)	62M	80(37)	III	49	28	(57)	No	Autopsy — Left anterior descending coronary occluded recently, myocardial fibrosis, only one parathyroid found (which was normal).
			V2	47	24	(51)		
27)	63F	66(44)	II	54	30	(55.5)	No	Autopsy — Heart negative, cirrhosis of liver, carcinoma of cervix, acute tubular necrosis, only two parathyroids obtained (details unavailable).
			V2	56	26	(46)		
28)	80F	71(42)	III	52	28	(54)	Yes	Autopsy—Coronary atherosclerosis 2+, adhesive pericarditis, myocardium negative, small cerebral infarct.
			V2	52	26	(50)		
29)	65M	104(33)	II	38	14	(37)	No	Autopsy — Heart negative, multiple pulmonary emboli, recent bilateral kidney infarcts, carcinoma of colon.
			V3	41	11	(27)		
30)	80F	81(39)	I	44	16	(36.4)	No	Autopsy—Coronory atherosclerosis 1+, Paget's disease of skull, cerebral arteriosclerosis.
Post-extrasystolic (V.P.B. measurements in			V3	52	12	(23)		
			I	48	16			

F=Female; M=Male; HCVD=Hypertensive cardiova scular disease; Ca=Calcium meq/liter; CO2=Carbon dioxide combining power meq/liter; K=potassium meq/liter; Mg=magnesium meq/liter; intervals are in hundredths of a second. Normal values for our laboratory for Ca, CO2, K, Mg are respectively, 4.5 to 5.5, 22 to 32, 3.5 to 5 and 1.5 to 2 meq/liter.

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Pulmonary Manifestations in Rheumatoid Disease*

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Rheumatoid Lung Disease Is Rare Manifestation of Systemic Disorder.

Rheumatoid arthritis is well recognized as a systemic disease capable of producing inflammatory changes in connective tissues anywhere in the body and therefore should be properly termed rheumatoid disease.

There is an abundance of connective tissue in the interstitial stroma and the profuse vascular system of the lung. Pulmonary involvement should then be reasonably expected to occur in rheumatoid disease and is compatible with the concept that this state is a systemic affliction.

HISTORY

Fuller first associated pulmonary involvement with rheumatoid arthritis in 1860 when he called attention to the fact that pleurisy was an important complication of this disease.[1] Despite this astute observation, it was not mentioned again until 1940 when Bennett and his associates reported a rheumatoid nodule involving the pleura.[2] The first cases of necrobiotic nodules in the lung parenchyma were reported in 1948 by Ellman and Ball,[3] and Raven. Many reports followed of cases with pulmonary lesions associated with rheumatoid arthritis, but these authors assumed a casual relationship without histological proof. Arnoff and co-workers pointed out that most of these cases were later proven erroneous.[4] These erroneous case reports compounded the confusion and engendered a controversy concerning the pulmonary involvement associated with rheumatoid arthritis that is still unsettled.

CASE PRESENTATION

T.C., a 57-year-old white male, was admitted to the Rhode Island Hospital for the fifth and final time in December of 1967 because of increasing shortness of breath and severe rheumatoid arthritis.

Fist admission. This man had been in excellent health until March 1962, when he developed migratory joint pains invilving both hands, wrists, knees, and right shoulder. He was treated with salicylates and phenylbutazone. The symptoms subsided, and he was well until September, at which time his left knee became swollen, red, and extremely painful; and he was treated with triamcinolone. The following day he had to be hospitalized because of a 104.2F. temperature and exacerbation of multiple joint involvement. He was started on triamcinolone, 20 mg. per day, and the symptoms were controlled in 24 hours; however, in the following week the symptoms returned, and chloroquine phosphate, 250 mg. was added to the drug regimen and again the symptoms responded.

Pertinent physical and laboratory findings were: Blood pressure 120/80; late flocculation 1:5, 120; C-reactive protein weakly positive; L. E. prep. x 3 was negative; the corrected erythrocyte sedimentation rate was 30 mm. per hour; x-ray studies of the chest were reported as normal. The joint manifestations were as noted above. There was no complaint referable to the respiratory system. He was discharged on the 20th hospital day.

Second admission. In July of 1963 he had his last eight teeth extracted because of severe caries. During this period the blood pressure was 190/130. No change was noted in the joints.

Third admission. In June 1964 a recurrence of fever, joint pains, and inability to walk necessitated hospitalization. The patient stated he had been unable to work regularly because of frequent attacks of arthritis and increasing difficulty with locomotion. He also noted a marked decrease in appetite with the concomitant loss of forty pounds. Therapy consisted of triamcinolone, 8 mg. three times daily, chloroquine phosphate, 250 mg. daily, and salicylates, 0.6 gm. every four hours. The blood pressure was 140/90. He was discharged on the 15th hospital day.

Fourth admission. In November 1965, the patient had a cerebral thrombosis with a right hemiplegia and slurring of speech. The blood pressure was 230/130. Therapy consisted of triamcinolone, 2 mg. three times daily; indomethacin, 25 mg. twice daily; hydrochlorothiazide, 50 mg. daily; and reserpine daily. At the end of two months the patient was transferred to the Dr. U. E. Zambarano Hospital at Wallum Lake, Rhode Island. He was given physical therapy and a leg brace and his walking gradually improved. Despite the fact that he had many exacerbations of arthritis, steroids were gradually withdrawn and his symptoms were controlled with Norgesic® and diuretics. He was discharged to a nursing home in November 1966.

Final admission. For fourteen months since his discharge the patient had been treated with salicy-

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lates and steroids during exacerbation of the arthritis. The patient at this time spent most of his time in bed and yet noted the the onset of difficulty in breathing shortly prior to admission. He noted the loss of 100 pounds and an almost complete loss of appetite. He smoked two or three packages of cigarettes a day and previously had had no respiratory difficulty. He had flexion deformities and contracture of his fingers and toes, and right leg. Typical rheumatoid spindle joints were present as was a rheumatoid nodule over the left tibia. The spine was flexed and fixed. There were inspiratory rales and rhonchi, and expiratory wheezing over the entire chest.

The sedimentation rate was 47 mm. per hour; hemoglobin 12 grams; hematocrit 39 per cent and white blood count 12,200 with 77 per cent neutrophils and 23 per cent lymphocytes. Arterial bloods drawn on admission showed a pH 7.43, PO_2 60, PCO_2 28, 0_2 saturation 91 per cent total CO_2 18. The serum electrolytes, serum proteins, calcium, phosphorus, and billirubin were within normal limits. Repeated sputum smears were negative for tubercle baccillus and malignant cells. Chest x-ray studies and laminograms were reported as showing diffuse insterstitial pneumonitis and fibrositis. The latex flocculation was still 1:5, 120. The pulmonary function studies are recorded in Table 1.

Comments: The inspiratory capacity, expiratory reserve volume, and vital capacity are all markedly reduced. The increase in residual volume and total lung capacity may be due to an increased residual volume or a reduction of the total lung capacity, probably the latter. The end tidal CO_2 tension is slightly low.

TABLE 1

PULMONARY FUNCTIONS TESTS

Volumes	Observed	Predicted	% Predicted
Inspiratory Capacity ml	1320	2710	48%
Expiratory Reserve Volume ml	780	900	86%
Vital Capacity ml	1550	3610	42%
Residual Volume/RC	38%	29%	
MECHANICS OF BREATHING			
Maximum Expiratory Flow	50	1200	25
Forced Expiratory Volume	430	1260	430
% Vital Capacity, 1 sec.	27%	81%	28%
% Vital Capacity, 3 sec.	71%	96%	64%
Peak Flow	160	530	160
M.B.C.	32	93	
Total Lung Resistance	4	2	
VENTILATION			
Rate	26/min		
Total Volume	480 ml		
Min. Volume	12.5 L/min		
End Tidal Co_2	30 mm Hg		

The mechanics of breathing reveal no response to a bronchodilator and markedly impaired flow rate during expiration. The forced vital capacity in one and three seconds are both in the severely impaired range. His peak flow rate and maximum breathing capacity are also markedly reduced. Total lung and chest wall resistance was calculated at 4, which is about 2 times normal.

The x-ray studies show the progressive changes that took place in the lungs from January 7, 1966, August 29, 1966, and December 12, 1967. (Figs. 1-3).

Post-mortem examination of the lungs was as follows: The left lung weighed 660 grams; the right, 645. Grossly, there were multiple emboli in the right middle and lower lobes. Microscopically, the pleural surfaces showed focal fibrous thickening and bronchopneumonia diffusely scattered throughout the lung fields.

In all the sections and also in sections of the hilar lymph nodes, distinct multiple pleural and parenchymal chronic granulomatous lesions were observed. The central areas of these lesions showed granular necrosis which caused complete destruction of normal tissue.

Surrounding these lesions ,there was active necrosis, and there were pereipheral fibroblastic proliferations which showed focal palisading. Acid-fast stains and Grindley's stain for fungus were negative.

This case represents the 40th reported case of nodular monpneumoconiotic pleuropulmonary rheumatoid disease.

PULMONARY LESIONS

Although pulmonary involvement is not a frequent manifestation of rheumatoid disease, it is being recognized more as the physician is alerted to the possible relationship.

There are two pathological conditions which are definitely accepted as manifestations of rheumatoid disease. There are Caplan's syndrome and granulomatous lesions appearing in the lungs with the same histological configuration of a peripheral rheumatoid nodule.[5] Spencer states that these lesions are distinctive of rheumatoid disease.[6] The third usually accepted entity of this disease is pleural effusion. [7-9] There is considerable controversy concerning the cases of diffuse interstitial pneumonitis that later develop fibrosis. Some deny these as being part of the rheumatoid diathesis,[4] while others accept it as part of the rheumatoid process. [3,10-12]



Figure 1.

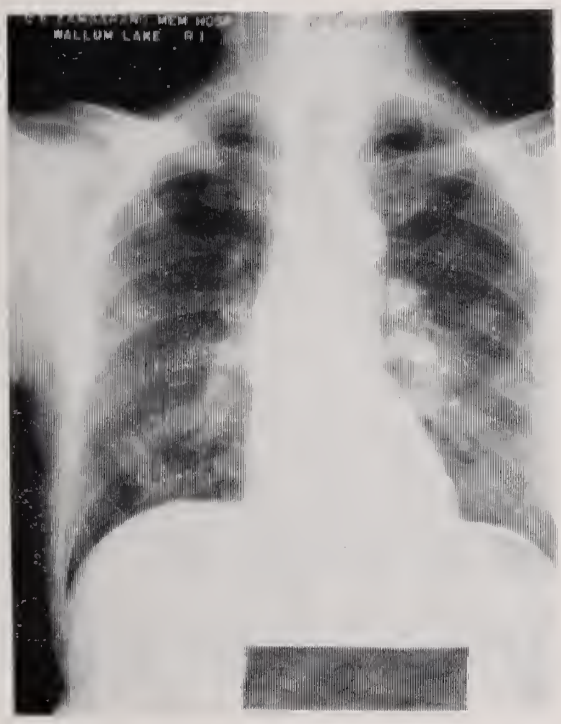


Figure 2.

CAPLAN'S SYNDROME

Caplan first described distinct nodules in coal miners and delineated them from the progressive massive fibrosis that occurs in these individuals.[13] These nodules have been reported in siliocotic lesions by Clerens (1953), in foundry workers (silico-siderosis) by Caplan and his associates, in boiler scalers by Campbell (1958), and in asbestosis by Richards and Barrett (1958).[14]

Systemic rheumatoid arthritis is absent in 40 per cent of patients with typical Caplan nodules. These anarthritic patients usually have the rheumatoid factors present in their serum, and many later develop typical articular disease.[14]

X-ray findings in Caplan's syndrome differ from progressive massive fibrosis in that the shadows are seen as large well-rounded areas in the periphery of the lung fields. These nodules also enlarge much more rapidly. The nodules of Caplan's syndrome may cavitate and calcify and suggest silicotuberculosis. In progressive massive fibrosis of coal miners the lesions are restricted primarily to the upper lobes, and there is much more retraction of lung tissue toward the hilum.

NODULAR PLEUROPULMONARY RHEUMATOID DISEASE

Nodular non-pneumoconiotic pleuropulmonary rheumatoid disease has been reported only thirty-nine times previously.[15] Ten of the cases have had nodules which underwent cavitation thus adding to the diagnostic difficulty.[16]

Rheumatoid arthritis is two to two-and-a-half times more common in women than in men; however, the ratio of rheumatoid nodules and cavity formation is two to one in the male.[16]

Radiographically the nodules are usually discrete and round, and may be slightly lobulated. The diameter varies from several millimeters to a

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Figure 3.

few centimeters, and they tend to be subpleural in location. They may occur as a single nodule or appear diffuse and miliary, and may show spontaneous regression after having remained unchanged for long periods of time. In other instances their rapid increase in size and number simulates a metastic neoplasia.

Histologically the granulomatous nodules in the pleura and lungs have a configuration identical to that of the subcutaneous nodules which occur in association with rheumatoid arthritis. The central area shows typical necrobiotic changes and is surrounded by a zone of cells which are oriented radially. This radial orientation consists primarily of fibroblasts and produces a palisading effect that is considered characteristic of rheumatoid disease. The peripheral zone consists of lymphocytes, plasma cells, and fibroblasts. The concomitant occurrence of rheumatoid nodules and diffuse interstitial pneumonitis and fibrosis or the appearance of one type of lesion followed by the other has only been reported infrequently. The finding of both types of lesion in the same patient suggests a significant relationship. Martel et al. have pointed out that it may be more common than is presently realized, because small nodules can easily be missed radiologically in the presence of diffuse fibrosis. Further, some nodular lesions, in the presence of diffuse fibrosis, are not rheumatoid nodules but are nodular areas of fibrosis.[12] The articular manifestations usually are present before the pulmonary lesions are radiographically demonstrated. There are confirmed cases where the parenchymal pulmonary lesions were present before any evidence of clinical articular disease was found.[12]

The question frequently raised about the possibility that steroid therapy may be responsible for this entity has never been suggested in the literature. In eight of the early cases reported no steroids were employed, and all had proven histological lesions.[17]

The tendency of the nodules to be located in the corticopleural area may explain the frequent occurrence of pleural effusions.

RHEUMATOID PLEURITIS AND EFFUSION

The pleural effusion that frequently occurs as a complication of rheumatoid disease is generally accepted as a specific manifestation of this affliction.

Ellman, Emerson, and Schools established this with their careful studies.[7–9] Carr et al. have reported that the glucose concentration in pleural fluid due to rheumatoid disease is very low and frequently near zero. Recently Carr and McGuckin showed that, after the oral administration of glucose to patients with cancer and rheumatoid arthritis and also pleural effusion, the glucose concentration of the effusion did not rise. The patients with cancer had comparable blood and pleural fluid levels. They postulate that this is due to the inflammatory process of rheumatoid disease specifically altering the normal state of one or more of the enzymes which constitute the carbohydrate transport mechanism of the cellular membrane.[18]

Another aid in diagnosis of the effusion that accompanies rheumatoid disease was suggested by Carmichael and Golding. They stress the importance of searching for the RA cell. These may be seen in unstained wet preparations or can be visualized with supravital stains, such as Sudan III. When these cells are washed and disintegrated, they release the rheumatoid factor. They are diagnostically helpful only under this circumstance, since morphologically similar cells may be seen in other conditions.[19]

Lee, in a review of pleural effusion and rheumatoid disease, found that it occurred only in patients over 45 years of age and occurred with equal frenquency in the male and female. He also reported that the overall prognosis is not altered by the occurrence of an effusate and that they can be treated satisfactorily by one or two thoracenteses. An effusion occurring with rheumatoid disease in a patient over 45 years of age must be suspected of being of rheumatoid etiology.[20]

DIFFUSE INTERSTITIAL FIBROSIS

The occurrence of diffuse interstitial fibrosis in association with rheumatoid disease is accepted by many as a specific manifestation of the rheumatoid diasthesis.[3, 10–12] Others deny this with equal vigor.[4]

There is, however, considerable evidence that diffuse interstitial fibrosis is part of the rheumatoid process. The protagonists of this position cite several patients whose disease was ushered in by pulmonary fibrosis and the presence of a positive latex fixation in their serum and who were anarthritic. Subsequently they developed the classical rheumatoid articular manifestations.

Baggenestoss et al. reported that 12 patients in their series had simultaneous exacerbations of pulmonary and joint symptoms with progressive involvement of these systems both clinically and roentgenographically. Four of these 12 developed severe cough, dyspnea, and pleuritic pain, tender swollen joints, and rapidly developing subcutaneous nodules all over the body. Biopsy revealed these nodules to be typical of rheumatoid diseases.[21]

Rubin et al. have stated that, although nonnecrobiotic lesions do not have the same specificity as granulomatous nodules, there is evidence indicating that interstitial pulmonary fibrosis occurring in association with rheumatoid arthritis is part of

the basic disturbance, unless another cause can be found. They cite several cases in which pulmonary disease preceded joint manifestations.[15]

Rubin and Lubliner and others have called attention to the close resemblance of the interstitial pulmonary lesions associated with rheumatoid disease and the Hamman-Rich syndrome.[22] Rubin states that there is little doubt that an appreciable number of the Hamman-Rich syndrome cases are representative of rheumatoid disease even when anarthritic. Doctor and Snider believe that the diagnosis of Hamman-Rich syndrome should be restricted to patients with diffuse interstitial fibrosis of undetermined etiology, unassociated with rheumatoid arthritis. These authors found that in 116 cases in which pulmonary interstitial fibrosis was on isolated finding, 25 per cent were associated with joint disease.[23] In view of the rare occurrence of both of these disease states, this would appear to be more than mere coinicidence.

Another significant finding reported by several authors has been the presence of positive serological tests for rheumatoid disease in anrthritic patients who have interstitial pulmonary fibrosis.[24,25]

SUMMARY

Although the major pathology and clinical evidence of rheumatoid disease is usually articular, it must be remembered that this is a systemic disorder. The connective tissues in any part of the body can be and often are involved. The lungs contain an abundance of connective tissue in the interstitial stroma and the extensive vascular system. An increasing awareness of this fact has led to more frequent recognition by the physician of rheumatoid lung disease in the last few years. The first histologically proven case of rhematoid lung disease that has occurred at the Rhode Island Hospital is reported, and a brief review is presented.

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Ischemic Necrosis of Muscle (Acute Anterior Compartment Syndrome) Following Repair of Anterior Compartment Muscle Hernias

Fasciotomy Preferable To Fascial Closure As Treatment For Chronic Syndrome.

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The anterior compartment syndrome is a condition which can be acute with severe sequelae or chronic. Brief descriptions of the acute and chronic forms of this syndrome will be given and two cases of acute anterior compartment syndrome following repair of small anterior compartment muscle hernias will be reported.

ANATOMY

The anterior compartment of the leg contains the anterior tibial artery, veins, deep peroneal nerve, and the dorsiflexors of the foot and toes. It is bounded by the tibia, fibula, interosseous membrane, and the tough anterior crural fascia. The boundaries of the compartment are unyielding, and anything causing swelling or increase in size of the muscle will do so to the detriment of the contents of the compartment.

ETIOLOGY

By definition, the anterior compartment syndrome is distinguished from other conditions resulting in ischemia leading to necrosis or fibrosis of the anterior compartment musculature. Known anatomic causes are crush injuries, fractures, embolization of the anterior tibial artery, open heart surgery, and skin traction. The title "Anterior Compartment Syndrome" is rightly reserved for those cases in which there is no demonstrable anatomic etiology.

ACUTE FORM

This condition may follow strenuous, unaccustomed exercise such as marching, running, jumping, or climbing. Pain is the cardinal symptom and usually comes on during exercise, though its onset may be delayed as much as 12 hours. Pain is propressive, severe, and unrelenting; as the syndrome progresses, it produces paralysis of the anterior compartment muscles. Physical findings are marked tenderness to palpation of the anterior leg, erythema, measurable swelling, increased surface heat, and shiny overlying skin. The dorsalis pedis pulse may be absent. Presence of a pulse does not rule out the syndrome. Because of pain, inhibition of contraction of the peroneal and posterior compartment muscles may be present. As ischemia progresses and necrosis occurs, fever and leukocytosis may ensue. Early recognition and prompt treatment of fasciotomy may prevent complete loss of the anterior compartment muscalature by ischemic necrosis. Attempts at expectant treatment and indirect methods of treatment such as sympathetic blocks have not proved completely successful. The differential diagnosis of this condition involves consideration of cellulitis, osteomyelitis, thrombophlebitis, stress fracture of the tibia, and "shin splints." Weakness and paralysis of muscle does not occur with any of the above.[1,2]

CHRONIC FORM

There is a less well-known chronic form of the syndrome which can be confused with the claudication of peripheral arterial disease. Pain along the anterior leg following strenuous repetitive exercise may be vague and annoying or sharp and disabling. It is relieved by rest, though chronic cases have irreversibly passed into the acute form. The pain is distinguished from claudication by its occurrence in a younger age group; more strenuous exercise is required to produce it and more time at rest to relieve it. Also, signs of peripheral arteriopathy are absent. The chronic anterior compartment syndrome can be diagnosed by history and by the provocative test of exercise. It will be relieved by elective anterior crural fasciotomy.[1,2]

In patients with the chronic syndrome the occurrence of small muscle hernias through rents in the anterior crural fascia is frequent.

CASE REPORTS

Case 1. A 31-year-old sailor had had a repair of a small muscle hernia of the anterior compartment fascia on 3-18-62. Healing was per primam, but increasing pain and a mass growing at the operative site led to his admission to the United States Naval Hospital, Newport, R.I. On June 12, 1962, at surgery a yellowish mass embedded in the substance of the extensor digitorum communis muscle was excised, and a wide fasciotomy of the anterior crural fascia was carried out. The mass

was firm and rubbery. A pathologic diagnosis of nonspecific necrosis of skeletal muscle with granulation tissue was made. This represented a localized necrosis with fibrous replacement of muscle without loss of function of the anterior compartment.

Case 2. A 25-year-old sailor had had a repair of an anterior compartment muscle hernia on 12-5-62. Severe pain in the leg followed surgery. On the fourth day "skin sutures were removed and a large amount of pus drained." Approximately four weeks after surgery, the patient was transferred to the United States Naval Hospital, Newport, R.I. At that time there was a gaping 3-inch wound of the anterior compartment, exposing necrotic muscle in its depth. Dorsiflexion of the foot was present to a slight degree. The dorsalis pedis pulse was absent. Three days after admission the anterior compartment was exposed surgically; the entire contents of the anterior compartment were found to be in a state of degeneration ranging from purulent necrosis to "fish-flesh necrosis" of muscle. The entire contents of the compartment were excised en bloc. The wound was packed open, and successful secondary closure accomplished one week later. The pathologic report revealed extensive ischemic necrosis of muscle. The patient wore a drop-foot brace for six months; the posterior tibial tendon was then transferred through the interosseous membrane to the midfoot. The patient subsequently was able to dorsiflex the foot strongly enough to walk on both heels, the brace was discarded, and he had little residual disability.

SUMMARY

The anterior compartment syndrome is well documented in the surgical literature, as is ischemia from known causes such as fracture of the tibia, closed injury to the anterior compartment,[4] and skin traction. A chronic form of the syndrome also exists which could conceivably be confused with claudication from arterial disease. Patients occasionally present with small anterior crural fascial hernias, which are the site of pain on exercise. If surgical treatment is required, wide fasciotomy of the anterior crural fascia is preferable to primary closure of the fascial rent. This will replace the small ovious muscle bulge with a larger, less obvious muscle bulge. The pain is possibly relieved by relieving the increased pressure within a closed compartment brought on by muscular swelling following effort. Sirbu,[4] Leach et al.,[2] and Paton[3] each reported one case of acute anterior compartment syndrome following closure of anterior compartment fascial defects. Two additional cases are reported.

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I certify that the statements made by me above are correct and complete.

Seebert J. Goldowsky, *Editor-in-chief*

Ventricular Tachycardia and Fibrillation Due to Carotid Sinus Stimulation

Method Best Avoided In Susceptible Individuals Unless Resuscitative Facilities Are Available.

SHARAD Y. DESHPANDE, M.D., *Cardiac Fellow, partially supported by grant from the Rhode Island Heart Association.*
FRANK MERLINO, M.D., *Cardiologist and Visiting Physician, Rhode Island Hospital.*
FRANK B. CUTTS, M.D., *Director, Department of Cardiology, and Visiting Physician, Rhode Island Hospital.*

Occasionally ventricular tachycardia or ventricular fibrillation occur following carotid sinus stimulation. [1-10] The two cases that are presented here serve as additional support to the above statement, as well as a warning that carotid sinus pressure must be applied with caution.

CASE REPORTS

Case 1: Mrs. F. K., 48 years old, had attacks of paroxysmal supraventricular tachycardia (PST) for seven years, lasting for a few minutes and occurring about once in six weeks. Repeated examination did not reveal any organic heart disease (blood pressure recordings, physical examination of the heart, roentgenogram of the chest, protein-bound iodine, and blood-sugar levels were within normal limits). The twelve-lead electrocardiogram on two occasions (while in sinus rhythm) showed a P-R interval of 0.12 seconds with normal QRS complexes (no Wolff-Parkinson-White configuration). She was never on digitalis or quinidine.

On 8/31/67 she was again seen in the Emergency Room because of palpitation of one hour's duration. An electrocardiogram showed PST with a ventricular rate of 187 per minute. An attempt to terminate the arrhythmia by right carotid sinus stimulation was unsuccessful. Subsequently, left carotid sinus massage was applied (unfortunately the period of maintaining pressure was not recorded on this, as well as on the next occasion). The related events are shown in Figure 1. At first it slowed the PST; secondly, a brief run of multifocal ventricular tachycardia (or extrasystoles) appeared; and finally, the rhythm changed to a regular sinus mechanism. With half an hour the patient experienced another bout of PST. Again left carotid sinus stimulation was attempted, and similar results were obtained. She was discharged with the resumption of regular sinus rhythm.

Case 2: Mr. O. P., a 63-year-old man who was known to have chronic lung disease and arteriosclerotic heart disease with congestive heart failure, was admitted to the hospital on 3/25/58 because of severe shortness of breath and aching pain across the upper abdomen and the lower sternum. Physical examination revealed that he was critically ill with acute pulmonary edema (treated with morphine, Thiomerin,® aminophylline, rotating tourniquets, and nasal oxygen). A clinical diagnosis of acute myocardial infarction was made. He had been maintained on digitalis leaf, 0.1 gm. daily for two years. It was continued in the same dosage until it was increased to 0.2 gm. daily on the seventh hospital day and to 0.3 gm. daily on the last hospital day. The pertinent laboratory findings are as follows: White blood cells 18,100/c.mm. with 93 per cent polymorphonuclear cells; Hemoglobin 13.8 gm. per cent; Hematocrit 43 per cent; negative Hinton test; Blood urea nitrogen 22 mg. per cent; and SGOT 129, 104 and 26 units the first, third and fourth hospital days, respectively. Portable x-ray film of the chest revealed pulmonary vascular congestion and an enlarged heart with left ventricular configuration. An electrocardiogram on admission showed sinus rhythm with left bundle branch block (a tracing in June 1957 also showed left bundle branch block). On 4/3/58 he developed tachycardia with a regular



Fig. 1: Case 1. Left carotid sinus massage. A continuous recording of lead I divided into strips A, B and C. See text for discussion of this and the following illustrations.

From the Heart Station, Rhode Island Hospital, Providence, R. I.

ventricular response at a rate of 136 per minute. Left carotid sinus pressure measurement was attempted (Figure 2), temporarily increasing the degree of A-V block and revealing the atrial rate to be 272 per minute. Within a few minutes the ventricular rate accelerated; therefore, right carotid sinus was applied (Figure 3). This time the maneuver led to the development of ventricular fibrillation and death of the patient. A request for autopsy was refused.

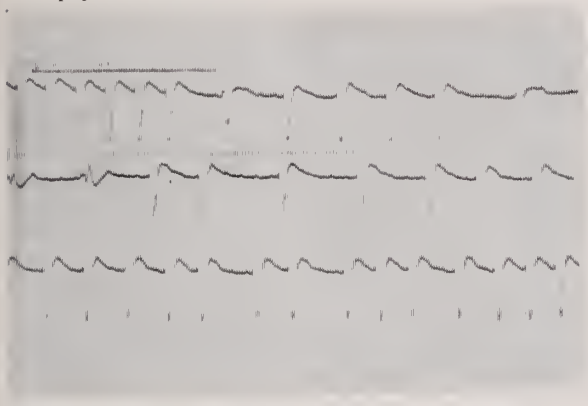


Fig. 2. Case 2. Left carotid sinus stimulation. A continuous recording of V3R divided into three strips.

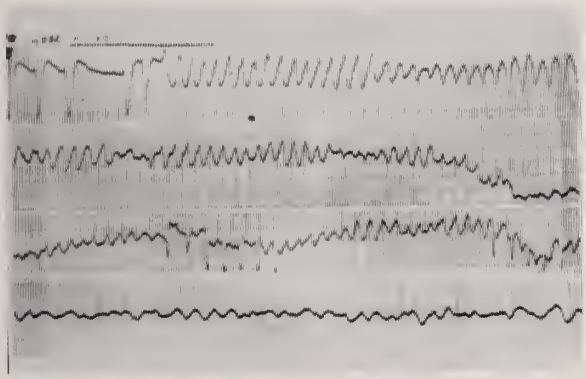


Fig. 3. Case 2. Right carotid sinus stimulation. A continuous recording of aVR divided into four strips.

To test the frequency of similar arrythmias during conversion of paroxysmal supraventricular tachycardia to normal sinus rhythm, 100 electrocardiograms showing this arrhythmia were reviewed. In 5 instances the mechanism of conversion to normal rhythm was recorded. In one instance a pair of ventricular extrasystoles was noted; one tracing showed alternating aberrant and normal intraventricular conduction; 2 patients showed 2:1 and 5:1 A-V block with occasional aberrant ventricular conduction. In only one instance, when conversion was the result of metaraminol administration, were multifocal ventricular extrasystoles recorded for several seconds, similar to the tracing in our case No. 1. It would appear therefore that this type of response during conversion to normal sinus rhythm is unusual.

DISCUSSION

Our first patient, in the absence of organic heart disease and digitalis therapy, developed brief runs of probably multifocal ventricular tachycardia after carotid sinus stimulation on two occasions. The second patient had severe coronary artery disease and had received significant amounts of digitalis. A review of the reported cases (Table 1) shows that organic heart disease is not a factor predisposing to the development of ventricular tachycardia or fibrillation following carotid sinus pressure. Three patients who died (including our case) after carotid sinus stimulation were receiving digitalis — a drug which enhances the effects of vagal stimulation and augments ventricular automaticity.

We believe that carotid sinus pressure should preferably be avoided in fully-digitalized patients; or, if performed, the facilities for resuscitation should be at hand. We also feel that the facilities for resuscitation should be available before such a procedure is undertaken for the patients who are not on digitalis but are known to develop ventricular extrasystoles or tachycardia after carotid sinus stimulation.

The mechanism by which carotid sinus stimulation leads to the development of ventricular arrhythmias is not distinctly known. This action has been attributed to the presence of vagal fibers, as an exceptional occurrence, in the human ventricles or to the formation of acetylcholine in the atria (during vagal stimulation) and reaching the ventricles.[8]

SUMMARY

Two cases are presented who developed ventricular arrhythmias after carotid sinus stimulation. In the first case brief runs of multifocal ventricular tachycardia were seen on two occasions after carotid sinus pressure in the absence of organic heart disease or digitalis administration. The second patient affected with severe coronary artery disease and receiving digitalis therapy developed ventricular fibrillation and expired after carotid sinus stimulation.

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(Continued on next page)

TABLE 1

REVIEW OF REPORTED CASES

Authors	Age & Sex	Cardiovascular Diagnosis	Treatment	Effect of carotid sinus stimulation
Shookhoff (1931)	58 male	Essential hypertension, coronary vessel sclerosis, myocardial fibrosis, auricular fibrillation with cardiac decompensation.	unknown	Transient ventricular fibrillation with recovery.
Meredith et al (1950)	35 female	No organic heart disease, paroxysmal supraventricular tachycardia.	unknown	Paroxysmal ventricular tachycardia.
"	43	No organic heart disease, paroxysmal supraventricular tachycardia.	none	Paroxysmal ventricular tachycardia.
Hellerstein et al (1951)	unknown	6 cases of paroxysmal supraventricular tachycardia.	unknown	Paroxysmal ventricular tachycardia in all.
Scott (1960)	56 male	Hyperthyroidism, chronic atrial flutter	Digitalis	A brief run of multifocal ventricular tachycardia.
Greenwood et al (1962)	66 male	No organic heart disease, atrial flutter followed by PAT with block.	Digitalis and Quinidine	Ventricular fibrillation patient expired.
Wolff (1962)	unknown	No organic heart disease, paroxysmal atrial tachycardia.	unknown	A brief run of ventricular tachycardia.
Porus et al (1963)	54 male	Congestive heart failure, atrial and nodal (double) tachycardia.	Digitalis	Transient ventricular fibrillation.
Bellet (1963)	58 unknown	Supraventricular tachycardia with bundle branch block.	unknown	Ventricular fibrillation patient expired.
Hilal et al (1966)	49 male	No organic heart disease, atrial flutter.	Digitalis	Ventricular fibrillation patient expired.
Scherf et al (1966)	55 female	No organic heart disease, paroxysmal supraventricular tachycardia.	unknown	Paroxysmal ventricular tachycardia.

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ONE SENTENCE ESSAY ON MARRIAGE

There is virtually nothing else that is voluntary that 95 per cent of the people do.

. . . C. B. Broderick, Ph.D., Penn. State Univ.

LE PLU CA CHANGE . . .

Item: University students organize protest — professor is dismissed.

The professor is Cecco d'Ascoli, who taught astrology at the University of Bologna until his inaccurate predictions caused students to fire him (at the stake) in 1327.

* * *

Item: Senate amends selective service law — draftees to be chosen by lottery.

The changes in the selection of soldiers were introduced and passed by the Roman Senate in the early days of the Empire.

* * *

Item: Dangers of water pollution and air pollution cited by Congressman and conservationist.

The concerned Congressman is George Perkins Marsh, whose environmental theories were first published in 1864 — a good century ahead of their acceptance.

. . . Courtesy Horizon Magazine promotional brochure.

Editorials

Guest Editorial

MEDICAL SCHOOL CURRICULUM REFORM*

Of the several components making up a medical school — faculty, student body, physical plant, available patient population, and curriculum — only one, the curriculum, is susceptible of relatively simple change. In view of many purported or real defects in current medical school curricula, it is no wonder that many of the most distinguished of our medical schools — among them Harvard, the University of Pennsylvania, and Stanford — are currently breaking old shackles, and possibly forging new ones.

The time-tested pedagogic devices of cadaver dissection (Vesalius) and histopathology (Virchow) formed the rigid basis of medical education in the post-Flexner medical school until the famous Western Reserve experiment was conceived in the late 1940's. This has been followed by a growing revolution in curriculum design in which certain features are frequently encountered.

1) Increase in the time available to students for taking elective courses.

2) Curtailment of the great blocks of time formerly deemed essential for teaching certain basic sciences — for example, gross anatomy.

3) Early introduction of clinical material and attempts to reduce the man-made barrier between clinical and basic medical sciences.

4) Provision of research opportunities to medical students during the school experience.

5) Definition of a "core" in each discipline or group of disciplines — a body of knowledge and skills considered essential and minimal, mastery of which is demanded.

6) Integration, not only between basic and clinical matters but also among the several basic disciplines.

7) Reduction of the number of years between high school and the award of the M.D. degree from the traditional 8 to 7 or even 6. Prolongation of the academic experience is also being tested.

8) Earlier consideration, in increasing depth, of problems of man and his environment, the role of the doctor in society, the modes of delivery of medical care, and so forth.

In comparing new curricula with old, it should be borne in mind that there is no one curriculum that is best in all regards and for all people. Whether we study man "horizontally" (that is, by disciplines) or "vertically' (by organ systems) is of less importance than the dedication of the teacher, the excitement of the student. If the revolution enhances either of these last two elments, it is accomplishing its mission.

We should beware of the questionable practice, common among educators, of packaging old wine in new bottles. Changing the name of a course does not necessarily change its content. What is offered as "molecular biology" in one school may prove to be contained in the "genetics" and "biochemistry" offerings at another. It is easy to lapse into the "in" vernacular peppered with words like *core curriculum, seminal, integrative, elective,* and *correlative.* In most instances the actual substances taught and learned in medical schools change more slowly than does the language used to announce the novelty of the curriculum.

DE WITT STETTEN, JR.
Dean, School of Medicine
Rutgers University

*"Medical School Curriculum Reform," DeWitt Stetten, SCIENCE, Vol. 160, pp 1293, 21 June 1968. Copyright 1968 by the American Association for the Advancement of Science. Reprinted by permission.

HOMEMAKER-HOME HEALTH AIDE SERVICES

The Homemaker-Home Health Aide Services of Rhode Island, located in Providence, is a United Fund Agency. Its services are purchased (primarily for Medicare patients) under contractual agreement with the Providence and Kent County District Nursing Associations. The agency also has an agreement with the Department of Social Welfare and provides services to private individuals and families as well.

The organization carefully screens and trains its aides. They work under supervision as part of a team which includes a physician, a public health nurse, and a social worker. For patients in crisis situations or those who are chronically ill the aides perform homemaking and personal care tasks; stimulate rehabilitative exercises and activities; retrain the handicapped to be self-sufficient; and promote

(Continued on next page)

understanding and cooperation in behalf of the patient.

In its first nine months of operation the agency through its aides served 134 families in eleven communities and made more than 2300 visits. A typical example was the case of a middle aged woman who was injured at work and received Workmen's Compensation because of a fractured hip. She was able to leave the hospital five weeks earlier than might otherwise have been possible with the help of an aide in her home. Husbands have been able to return to work because aides cared for the young children when mothers were hospitalized and also later during their convalescence at home.

These services have great value in building patient morale and in holding families together in emergency situations. Physicians should also be mindful of the potential saving in hospital utilization which such services can provide.

GIORDANO-GIOVANNETTI DIET IN UREMIA

Diet management of chronic uremic states has been a difficult problem frequently complicated by nausea, vomiting, and diarrhea that further decrease impaired kidney function. Years ago the albuminuria and hypoproteinemia of uremia led to high protein feeding in an effort to compensate for these abnormalities. In recent years, however, low protein diets have proved more effective for azotemia and elevation of blood urea nitrogen in renal insufficiency. The standard prescription has been 0.5 grams of protein per kilogram of patient weight — roughly 40 grams of protein a day.

Then in 1964 Giordano reported a series of experiments on uremic patients fed with minimal daily requirements of essential amino acids as the only source of nitrogen. On a diet of less than two grams of nitrogen contained in eight essential amino acids, blood urea nitrogen fell due to utilization of urea in formation of non-essential amino acids. Limitation of exogenous N to essential amino acids led to utilization of endogenous N.

Giovannetti then devised an amino acid diet supplemented by calories from fat and carbohydrate arranged in a two step program. This was modified into a one step diet by Berlyne of England, so that the diet now consists of 18 grams of protein containing 3 grams of nitrogen and includes minimal daily requirements of the essential amino acids except methionine. The daily prescription calls for 1½ ounces of unsalted butter, 1 egg, 6½ ounces of milk, phenylketonuric bread, vegetable margarine, and sufficient sugar and glucose to total 2000 calories. Vegetables except peas, beans, and lentils are used, and supplementary iron, vitamins, and 0.5 grams of methionine complete the diet.

Berlyne reports that 26 patients were treated on this program. In all patients able to take the diet, even if glomerular filtration rate was less than 1.5 ml./min., there was always some beneficial response. Striking improvement in gastrointestinal function was observed in patients with clearing of nausea, vomiting, and diarrhea. Major reduction in blood urea, inorganic phosphate, and urate was evident; anemia was quite likely to improve, and only 3 of 26 patients developed uremic pericarditis. On the other hand, high potassium levels and marked but often asymptomatic acidosis developed. Terminal uremia was distinctly modified with absent gastrointestinal symptoms, but prominent epistaxis, bleeding, and agitation. Underlying renal function improved in only two patients, but patient activity and comfort were enhanced during this end stage disease.

The Giordano-Giovannetti diet now seems the most rational diet therapy available for the uremic phase of chronic renal disease.

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MORE ON TOBACCO

The June issue of the Medical Bulletin on Tobacco* is a report of real progress. Seven items of interest are included:

1. That smoking among youth is declining is indicated in a discussion of a paper by Doctor Daniel Horn, Director of the National Clearinghouse for Smoking and Health. Several studies reported by him reveal that a smaller number of boys and girls have taken up the habit in the past few years than previously. Ninety-one per cent of the students expressed their belief that smoking is harmful.

2. A strong statement by the Board of Regents of the American College of Physicians is quoted. It includes the recommendation "that cigarette advertising on television be banned."

3. Of the factors that favor the development of coronary heart disease the Framingham Study of 5,127 men and women showed that the habit of smoking cigarettes ranks next in importance to advanced age and a high level of cholesterol.

4. The Air Force reports field tests involving

419 airmen which showed an inverse relationship between performance and the number of cigarettes smoked daily.

5. Heavy cigarette smoking in man and nicotine injection in dogs and rats cause a rise in corticosteroids.

6. Lung cancer has at long last been induced experimentally. The latest announcement in this field by Saffiotti and co-workers concerns research in which cancer of the lung has been induced in hamsters by intratracheal instillation. This and previous reports also mentioned constitute an answer to the claim by the tobacco industry that no cancers have been induced experimentally by cigarette smoke.

7. The Federal Trade Commission is re-evaluating cigarette labelling. This agency is reported to believe that the warnings on cigarette packages are ineffective, but that people are becoming more concerned about the subject and that "mandatory disclosure" of tar and nicotine content by a standard test should be made available to all smokers.

Following these seven items there is an editorial titled "More Smoke Screens," which includes mention not only of obviously highly prejudiced articles by laymen but also a man with a Ph.D. degree who, while admitting that there is a higher death rate in male cigarette smokers than in nonsmokers, says that it is "difficult to see from the new epidemiological data how valid causal inferences can be drawn that cigarette smoking is linked to CHD (congestive heart disease) deaths." Perhaps this man's opinions may be linked with the fact that in the past his research "has received support from the Tobacco Industry."

A logical comment on this and other information on smoking would, in our judgment, be that, although the damage to the individual from heavy cigarette smoking cannot be compared with that caused by excessive imbibing of alcohol or taking of opiates and similar drugs, as far as the individual and society in general is concerned the great number of excessive cigarette smokers makes its damaging effect of prime importance. It is, therefore, incumbent on the medical profession to do all it can, individually and collectively, by precept and example, to aid the public in overcoming this definite cause of invalidism and death.

*Published jointly by the American Public Health Association, the American Heart Association, the American Cancer Society, and the National Tuberculosis Association.

FRIEND?

We were greatly pleased by the action taken earlier this year by the Council of the Massachusetts Medical Society in urging Massachusetts Blue Shield to adopt the usual and customary principle in payments for physicians' services and recommending that the income limit concept of the present Blue Shield contracts be phased out by January 1, 1970.

More recently Doctor John H. Knowles, General Director of the Massachusetts General Hospital, according to press reports took a somewhat different position before a Congressional subsommittee investigating the health care system. Knowles, who proudly reminds listeners that he was trained as an internist and understands the problems of practicing physicians, recommended at the hearing that Federal Medicare eliminate fiscal intermediaries and that group practices and primary physicians be paid under all Federal programs on a capitation basis. He further urged in order to bring hospital costs under control that all Federal programs as a condition of reimbursement require that hospital staffs be under the control of the medical director of the hospital (e.g. Doctor Knowles?) and that staff physicians be paid by the hospital on a capitation basis following prior budget approval, or on the basis of average payments to all hospitals.

These sharply conflicting views in neighboring Massachusetts have the makings, its seems to us, of another Boston Tea Party.

Guest Editorial

THE BAREFOOT SYNDROME

Isn't there something that can be done about getting our barefoot generation back into foot gear, at least when they go indoors? I know that any curtailment of their "rights" raises a hue and cry from them, but people who disapprove of their habits have rights too.

Is there anything more disgusting than sitting at a lunch counter next to someone with bare feet blackened by the filth on which he has been walking? It certainly doesn't stimulate one's appetite. Neither is it pleasant in a food market to trail after a black-footed individual who doesn't belong to the Indian tribe of the same name.

These places are privately owned, and it would seem that the proprietors have every right to emulate one of our neighboring states where small signs on the doors state that no one with bare feet may enter.

What price education when this emancipated group ignores the basic tenets of health which it has been taught since childhood and constantly exposes itself to all kinds of infection?

BEATRICE GOLDOWSKY
Medical Assistant

THROUGH . . .  *the Microscope*

R.I. MEDICAL JOURNAL (VOL. 1-49) MICROFILMED

Any member of the Society interested in securing a microfilm copy the Rhode Island Medical Journal since its start may purchase such copy from University Microfilms, Custom Services, Ann Arbor, Michigan, 48106. The price is $120.

* * *

ARE YOU SAFE AT HOME?

Half of all the blind in the nation today are victims of a needless tragedy, claims the Rhode Island Society for the Prevention of Blindness. In addition to those cases due to the neglect in getting an early diagnosis and proper treatment of eye diseases, many are because of accidents.

According to latest data from the Public Health Service's National Health Survey, more than 40 per cent of the accidents causing vision impairment in the U.S. today occur in the home. This represents a greater number than the combined number of at-work and automobile accidents in which eye injuries are sustained.

This high incidence of home eye injuries is due to carelessness because people just haven't learned to take industry, school and automobile safety habits and attitudes home with them.

To remedy this situation, the Society recommends that all members of the family wear all-purpose safety goggles when mowing lawns (especially with power mowers), burning trash, pruning bushes, spraying plants with insecticides, and while spreading chemical fertilizers. For proper safety goggles for around the home and garden, a local optical equipment center may be consulted.

The Society also warns against throwing glass bottles, used batteries, empty spray cans on trash fires, which can cause them to explode, showering potentially-blinding fragments of glass and metal and caustic chemicals.

Everyone who wears glasses should wear safety glasses, especially children and senior citizens who are exposed to more and new home-eye-accident hazards.

The Society urges parents to keep aerosol sprays containing pressurized liquids, such as deodorants, antibiotics, over cleaners, paints, and hair fixatives out of the reach of children at all times. It also warns parents that 17 per cent of the more serious injuries to children's eyes are caused by missile-typetoys such as pellet guns, dart guns, air guns, bean shooters, and toys having protruding points and sharp edges.

* * *

MALPRACTICE IN ALASKA

The malpractice suit situation became so bad in Alaska recently that insurance companies were in the process of withdrawing entirely. Doctors were actually leaving Alaska to escape the legal hazards of practice. In desperation, the Alaska Medical Association appealed directly to the Covernor, and finally the State legislature eased the situation somewhat by requiring professional testimony to assess blame in a malpractice suit, and thus staved off an acute doctor shortage in that state.

Pierce County (Wash.) Bulletin

* * *

UCONN HOSPITAL GETS $13.2 MILLION

The University of Connecticut's hospital in Farmington recently received a $13.2 million grant from the U.S. Public Health Service, according to a joint announcement by U.S. Senators Abraham A. Ribicoff and Thomas J. Dodd.

Release of this grant had been delayed by a federal freeze on funds while Congress debated the administration's 10 per cent tax surcharge and a $6 billion budget cut.

The release of these funds will allow the Center to proceed with plans for construction of a 200-bed, 10-story hospital and medical and dental outpatient clinics. The new facilities will contain

(Continued on Page 629)

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Benadryl®
(diphenhydramine hydrochloride)

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Supplied in various dosage forms including Kapseals,® containing 50 mg. of diphenhydramine hydrochloride.

Parke, Davis & Company, Detroit, Michigan 48232

PARKE-DAVIS

No two women are quite alike...





and no other oral contraceptive is quite like Ovulen-21®

Each tablet contains ethynodiol diacetate 1 mg., mestranol 0.1 mg.

The progestin is distinctive, and for some women this may mean a different clinical response. The Compack® tablet dispenser is distinctive; its functional simplicity makes it virtually patient-proof. The acceptance of Ovulen-21 is distinctive... together with Ovulen®, it is more often prescribed than any other individual contraceptive product currently available.

Indication—Oral contraception.

Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching.

The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 values; metyrapone test; pregnanediol determination.

References: 1. Inman, W. H. W., and Vessey, M. P.: Brit. Med. J. 2:193-199 (April 27) 1968. 2. Vessey, M. P., and Doll, R.: Brit. Med. J. 2:199-205 (April 27) 1968.

Before prescribing see Detailed Product Information.

SEARLE Where "The Pill" Began
G. D. SEARLE & CO., P. O. Box 5110, Chicago, Illinois 60680



"Breathing's a snap again," he said gingerly.
(COMPLIMENTS OF DIMETAPP)

Help clear up that miserable stuffed-up feeling with Dimetapp. Each hard-working Extentab brings welcome relief from the stuffiness, drip and congestion of upper respiratory conditions for up to 10-12 hours. Yet, patients seldom experience drowsiness or overstimulation. The key to success is the Dimetapp formula: Dimetane (brompheniramine maleate)—along with phenylephrine and phenylpropanolamine, two time-tested decongestants. They get the job done... in a hurry.

Indications: Dimetapp is indicated for symptomatic relief of the allergic manifestations of respiratory illnesses, such as the common cold and bronchial asthma, seasonal allergies, sinusitis, rhinitis, conjunctivitis, and otitis.
Contraindications: Hypersensitivity to antihistamines. Not recommended for use during pregnancy.
Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
Dosage: 1 Extentab morning and evening.
Supplied: Bottles of 100 and 500.

A.H. ROBINS COMPANY
RICHMOND, VA. 2327

A·H·ROBINS

in sinusitis, colds, U.R.I.
Dimetapp® Extentabs®
(Dimetane® [brompheniramine maleate], 12 mg.; phenylephrine HCl, 15 mg.; phenylpropanolamine HCl, 15 mg.)
up to 10-12 hours clear breathing on one tablet



THROUGH THE MICROSCOPE

(Continued from Page 628)

about 600,000 square feet of space and are expected to cost about $25 million.

The UConn Health Center will be the first to have dental services as part of the hospital and clinic program. It will also combine the teaching of medical and dental students more completely than any other schools.

The hospital plans call for a basically circular floor plan with operating rooms in the basement to help maintain a sterile environment. The rooms will be slightly pressurized to keep the flow of air and germs moving out of the area.

* * *

1 OUT OF 4 WORK ACCIDENTS INVOLVE FINGERS, HANDS

Those summer activities — barbecuing, boating, lawn mowing, cycling, gardening, home repairing and the like — have one thing in common: they invite hand and finger injuries.

And according to the Health Insurance Institute, these injuries are far more common than most people realize.

High Toll

Disabling work injuries to hands and fingers, reports the National Safety Council, account for nearly one of four industrial accidents in the nation annually.

This year, for instance, an estimated ½ million work accidents are expected in which fingers and hands will be severed, crushed, mangled and burned — with accidents to fingers outnumbering accidents to hands almost three to one.

There are five million os so workers under 18 who, it is estimated, will be injured this year, and at least one out of every three disabling accidents will involve the hands or fingers.

A badly injured hand, says the Institute, presents a serious problem to both victim and family. Money cannot replace personal loss. But it can alleviate financial loss.

Incidentally, the majority of all workers are insured through a group health insurance policy, while many have loss of income insurance to help cover their living expenses if they become disabled.

The Institute pointed out that at the beginning of this year 68 million people under 65 were protected against hospital expenses through insurance company group plans. At the same time, a total of 58 million people were covered for loss of income through both group and individual insurance policies.

* * *

(Continued on Page 631)



THE BETTMANN ARCHIVE

Just one tablet at bedtime • Prevents painful night leg cramps • Permits restful sleep

How many of your patients stamp their feet at night and lose sleep because of painful leg cramps? Unless prompted, they usually fail to report this distressing condition and suffer needlessly.

One tablet of QUINAMM at bedtime usually controls distressing night cramps and permits restful sleep with the initial dose.

Prescribing information—Composition: Each white, beveled, compressed tablet contains: Quinine sulfate, 260 mg., Aminophylline, 195 mg. **Indications:** For the prevention and treatment of nocturnal and recumbency leg muscle cramps, including those associated with arthritis, diabetes, varicose veins, thrombophlebitis, arteriosclerosis and static foot deformities. **Contraindications:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Side Effects/Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

THE NATIONAL DRUG COMPANY
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Togetherness....

...can be rough when epidemics of nausea and vomiting strike a family. Emetrol offers prompt, safe relief. It is free from toxicity[1] or side effects[2,3] and will not mask symptoms of serious organic disorders.

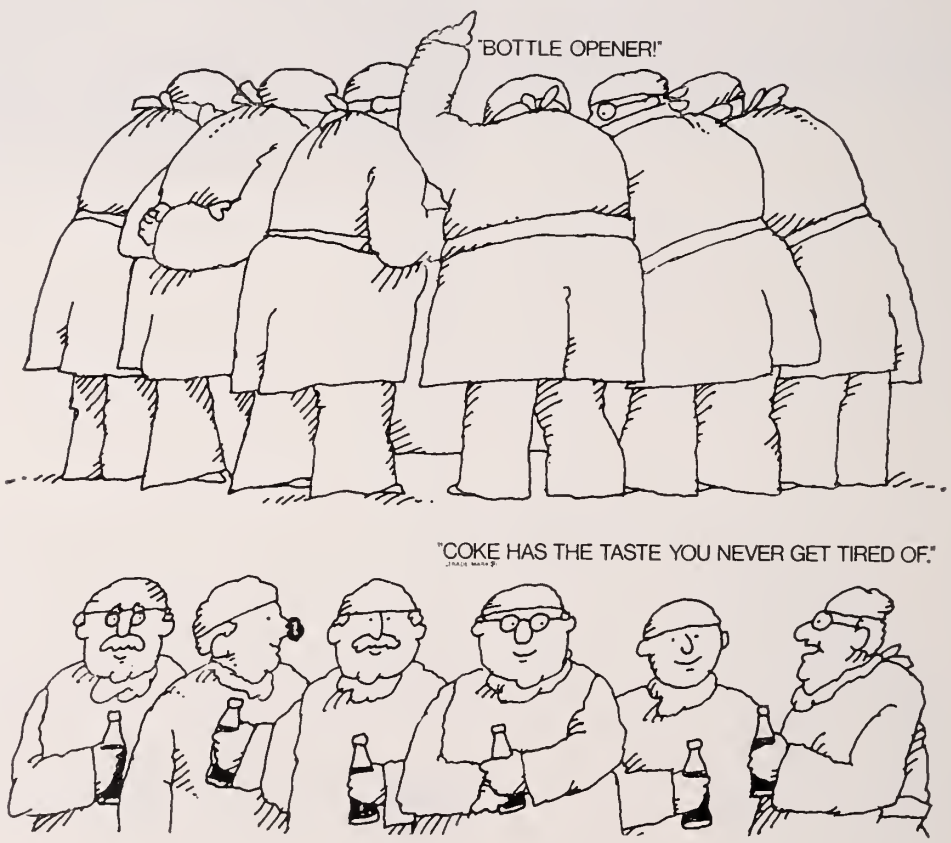
1. Bradley, J. E., *et al.*: J. Pediat. *38*:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. *20*:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst, & Gynec. *65*:311 (Feb.) 1953.



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Emetrol®
phosphorated carbohydrate solution
emesis control



"COCA-COLA AND COKE ARE REGISTERED TRADE MARKS WHICH IDENTIFY ONLY THE PRODUCT OF THE COCA-COLA COMPANY

THROUGH THE MICROSCOPE

(Continued from Page 629)

STUDY SCORES HEAVY SOCIAL DRINKING AS HEALTH HAZARD

How do you define social drinking?

If your definition includes tippling a few martinis at lunch, a couple in your club car, then an apertif and a nightcap, hold onto to your liver, for you may be on your way to big trouble.

A recent study on the effects of alcohol makes these points:

- You don't have to be an alcoholic, or even a drunk, to have your health affected by your drinking habits.
- Alcohol itself is poisonous to the liver and can, over a period of time, cause lethal liver damage.

The study involved placing non-alcoholic volunteers on a simulated cocktail regimen for a little over a week.

Vitamins Added

One group, in what was considered a typical executive's intake, drank the equivalent of 7 ounces of 86 proof whiskey for four days, then 11 ounces for two days, and finally 14 ounces for two to three days. This group showed a 5-to-13 fold increase in its liver fat level despite a high protein diet supplemented with vitamins.

The study, presented to the American Association of Pathologists and Bacteriologists, was conducted by Dr. Emanuel Rubin, of the Mt. Sinai School of Medicine in New York, and Dr. Charles S. Lieber, associate professor of medicine, Cornell University Medical College.

Dr. Rubin said that although fat level increases and cell damage were reversible after a few days or weeks of abstinence, steady damage over a long period may be irreparable.

He warned that social drinkers may keep up their habit for years, looking well, feeling and eating well, and never getting drunk. Yet, over the years, they could seriously harm themselves.

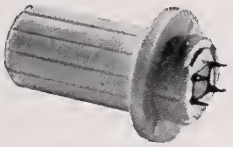
The Health Insurance Institute noted that illnesses most frequently associated with excessive alcohol intake are liver, stomach, kidney ailments. For alcoholics it often leads to nervous and mental disorders — even brain damage.

Should an insured alcoholic under a doctor's care become unable to work because of the effects of overdrinking, says the Institute, modern long term disability policies will guarantee him an income until the day he again is able to work.

There are insurance companies which include alcoholics in their rehabilitation programs and will provide personal medical and social aid, often sending the alcoholic to a specialized rehabilitation

(Continued on next page)

Tuberculosis? Influenza?
Pneumonia? Leukemia?
Hodgkin's Disease? Syphilis?
Systemic Fungal Diseases?
Chronic Chest Diseases?
or
HISTO?
(Histoplasmosis—"The Masquerader")



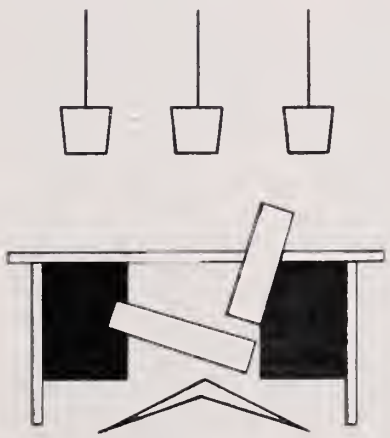
A new aid in differential diagnosis
HISTOPLASMIN, TINE TEST
(Rosenthal)
The LEDERTINE™ Applicator with the Blue Handle

Precautions—Nonspecific reactions are rare, but may occur. Vesiculation, ulceration or necrosis may occur at test site in highly sensitive persons. The test should be used with caution in patients known to be allergic to acacia, or to thimerosal (or other mercurial compounds).

Lederle

Ask your representative for details or write Medical Advisory Dept., Lederle Laboratories, Pearl River, New York 10965. 406-8

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center in an attempt to return him to a normal life.

Should an insured person require medical treatment for alcoholism, some policies will pay for treatment in an acute general hospital, while more liberal policies will provide it even in a sanitarium if the sanitarium meets the policy's description of a hospital.

* * *

16M IN U.S. SUFFER PAINS OF ARTHRITIS

More than 16 million people in the United States awoke today to the chronic aches and pains of arthritis, says the Health Insurance Institute.

And it's costing the 16.8 million arthritics $1 billion annually to treat the disease through drugs physical therapy, physician services and home care.

The cost of arthritis to the nation as a whole, including annual wage losses and medical care costs is estimated at more than $3.5 billion annually.

The total national investment in arthritis research and training for this year alone is expected to be $15 million.

There is no known cure for the disease yet — although encouraging developments in its treatment were reported at the recent annual meeting of the Arthritis Foundation in New York.

The U.S. Public Health Service found that in 1966-67, 700,000 Americans were so severely arthritic that they were unable to carry on normal daily activity.

Among the women in this "severe" category, 224,000 would be full-time homemakers if their health permitted. The loss of their services in economic terms amounts to $600 million, based on a valuation of $2,670 a year per person.

Persons able to work despite the disease, still lose 12 million work days a year, says the Institute; their resultant wage loss is about $20 million.

See Progress

Progress in arthritic treatment is based to a large extent on chemotherapy advances.

Dr. Charles J. Smyth, head of the division of rheumatic diseases at the University of Colorado Medical Center, Boulder, Colo., reports that pharmaceutical manufacturers are making available promising new compounds for clinical testing on arthritic patients at an "unprecedented rate."

According to Dr. Ephraim P. Engleman, clinical professor of medicine at the University of California Medical Center, San Francisco, conservative management, the use of steroids and physical therapy can do much to prevent crippling, preserve function and productivity, and alleviate pain.

* * *

NURSING EDUCATION PROGRAMS SEEK NEW APPROACHES

Reducing dropouts from nursing schools, keep-

(Continued on Page 633)



OMNI-TUSS® b.i.d.

. . . **because** OMNI-TUSS is indicated for cough associated with upper respiratory tract infections, bronchitis, bronchiectasis, bronchial asthma, emphysema, sinusitis and rhinitis, hay fever, or other allergic conditions. Any of these conditions may exhibit the general symptom syndrome—coughing, wheezing, bronchospasm, and tenacious mucus—which may benefit from the antitussive, bronchodilative, antihistaminic, and expectorant action of Omni-Tuss.

The therapeutic usefulness of Omni-Tuss is enhanced by a unique resin complex formulation providing the clinically desirable advantages of: (1) uniform drug availability throughout an extended period, (2) 8 to 12 hours of symptomatic control, (3) minimal dosage requirement, (4) minimal side effects.

Economical, efficient **b.i.d.** dosage—extremely well-tolerated by children, 6-12, and adults.

'Omni Tuss' Suspension: Each teaspoonful (5 cc.) contains 10 mg. codeine (Warning: May be habit-forming), 5 mg. phenyltoloxamine, 3 mg. chlorpheniramine, 25 mg. ephedrine, all as cation exchange resin complexes of sulfonated polystyrene, and 20 mg. guaiacol carbonate.

Available on prescription only. Class X exempt narcotic. Permissible on oral prescription.

Dosage: *Adults:* 1 teaspoonful (5 cc.) q12h.
Children (6-12 *years*): ½ teaspoonful q12h.

Side Effects: Minimal, but when encountered may include jitteriness, nausea, drying of mouth, insomnia, constipation, which disappear upon adjustment of the dose or discontinuance of treatment.

Precautions and Contraindications: For complete detailed information, refer to package insert or official brochure.

Strasenburgh

Strasenburgh Laboratories Division
Wallace & Tiernan Inc., Rochester, N.Y.

In the complex picture of moderate to severe anxiety...



there is a new reason for prescribing Mellaril (Thioridazine HCl)

effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

Before prescribing or administering, see Sandoz literature for full product information, includin adverse reactions reported with phenothiazines following is a brief precautionary statement.

Contraindications: Severe central nervous syste depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients wh have previously exhibited a hypersensitivity rea (e.g., blood dyscrasias, jaundice) to phenothiazi Phenothiazines are capable of potentiating cent nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent report leukopenia and/or agranulocytosis and convulsi seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmenta retinopathy may be avoided by remaining withi recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., drivin Orthostatic hypotension is more common in fem than in males. Do not use epinephrine in treatin drug-induced hypotension. Daily doses in exces 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism ar other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomi Nervous System*—Dryness of mouth, blurred vis constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urtic type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizer including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any signific disturbance of cardiac rhythm, several sudden ar unexpected deaths apparently due to cardiac arre have occurred in patients previously showing electrocardiographic changes. The use of periodi electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

Mellaril®
(Thioridazine HCl)
25 mg. t.i.d.

for moderate to severe anxie and mixed anxiety-depressio

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SANDOZ PHARMACEUTICALS, HANOVER, N. J.


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Keflin®
Sodium
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"The inconvenience of a cold"

For a cold, NTZ® Nasal Spray provides rapid relief of nasal symptoms. Relief starts with the first spray which opens the inferior part of the common meatus. A second spray, a few minutes later, will shrink the turbinates to help provide sinus drainage and ventilation. Dosage may be repeated every three or four hours as needed, for temporary relief of symptoms. NTZ is well tolerated but overdosage should be avoided.

As a sinusitis deterrent, NTZ Nasal Spray can be used to keep the nasal passages open during a cold to help prevent development of acute sinusitis—or to help prevent the acute condition from becoming chronic.

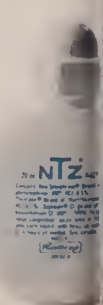
Supplied: NTZ Nasal Spray, plastic squeeze bottles of 20 ml.; NTZ Nasal Solution, bottles of 30 ml. (1 fl. oz.) with dropper.

NTZ is more than a simple vasoconstrictor. It contains

Neo-Synephrine® (brand of phenylephrine) HCl 0.5 per cent, the major component, virtually synonymous with fast, efficient but gentle nasal vasoconstriction.

Thenfadil® (brand of thenyldiamine) HCl 0.1 per cent, topical antihistamine for reduction of rhinorrhea, sneezing or itching. It combats the allergic reactions that may occur in colds or sinusitis.

Zephiran® (brand of benzalkonium, as chloride, refined) 1:5000, antiseptic preservative and wetting agent to promote penetration and spread of the formula.



Winthrop Laboratories, New York, N.Y. 10016 Winth

THROUGH THE MICROSCOPE

(Continued from Page 632)

ing teachers of nursing abreast of the most recent scientific advances in patient care, and increasing the quality of health services for disabled patients represent some of thhe aims of 21 new Projects for Improvement in Nurse Training which schools of nursing are undertaking with support from the Division of Nursing under the authority of the Nurse Training Act.

In Rhode Island, for example, a hospital school of nursing will attack the dropout problem through counseling of students and faculty confronted with students who have doubts about remaining in nursing school.

Combining innovation with practicality, four hospital schools of nursing in Illinois are joining in a cooperative inservice education program for their nursing faculties.

To ensure better team work in the rehabilitation of disabled patients, the nursing education program at the University of Florida will bring together members of varied health disciplines — nursing, medicine, psychology, and physical, speech, and occupational therapy — for instruction in the most recent rehabilitation concepts and techniques.

According to the Division of Nursing, 16 nursing education programs in hospitals and community colleges are participating in nine of the new Projects for Improvement in Nurse Training, and projects are also underway in 12 graduate and undergraduate nursing programs in colleges and universities. Funds now awarded to launch and carry the 21 new projects through their first year of operation total $1,078,902.

The project listed for Newport (R.I.) Hospital seeks to improve academic knowledge and social achievements of culturally disadvantaged candidates for nursing school, and it will be a four year program.

* * *

MEDICARE PLUS $378 MILLION FOR AGED MEDICAL CARE

The nation's 65 year-old-and-over population received $378 million towards their medical bills last year through private insurance company benefits.

This sum, which is in addition to any Medicare benefits they may have received, averaged out to over $1 million a day. It was paid by insurance companies to help elderly persons meet their medical expenses, the Health Insurance Institute said recently.

According to the Institute, about one out of every two older persons — over nine million of the nation's 19.6 million 65 and over population — currently owns some form of health insurance in addition to Medicare. (Continued on next page)

Q. How much does the **anticostive* hematinic** cost?

A. No more than costive hematinics cost!

The anticostive hematinic is
PERITINIC®
Hematinic with Vitamins and Fecal Softener

A tablet-a-day provides:	
● Elemental Iron (as Ferrous Fumarate)	100 mg
● Dioctyl Sodium Sulfosuccinate (to counteract constipating effect of iron)	100 mg
Vitamin B_1	7.5 mg
Vitamin B_2	7.5 mg
Vitamin B_6	7.5 mg
Vitamin B_{12}	50 mcgm
Vitamin C	200 mg
Niacinamide	30 mg
Folic Acid	0.05 mg
Pantothenic Acid	15 mg

Bottles of 60

* anticostive, *adj.* (*anti* opposed to + *costive* causing constipation.) Against constipation. Now isn't that a good idea in an iron-containing hematinic?

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After the picnic even Gramps Was a victim of intestinal cramps

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric*
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin,
and protects intestinal mucosa

In elderly patients it is particularly important to stop the diarrhea fast. Parepectolin helps you control diarrhea promptly and gain the patient's confidence until etiology has been determined.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
*Paregoric (equivalent) ..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin ..... (2½ grains) 162 mg.
Kaolin (specially purified) .... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.

RORER

WILLIAM H. RORER, INC.
Fort Washington, Pa.

The majority of the private insurance, says the Institute, is being used to pay for expenses not covered under the government program.

An institute analysis of government and private studies indicates that four out of five of those who relied on voluntary health insurance before Medicare still do — but on a supplementary basis.

More than half the benefits received last year ($192 million) were paid to those with hospital expense plan protection, while nearly $77 million went to those with major medical expense coverage.

Insurance to help pay for surgical and non-surgical care by physicians was responsible for $45 million in benefits; disability income programs accounted for almost $64 million; dental expense insurance, $¾ million.

The growing demand for "outside" benefits to supplement Medicare has been noted in a recent issue of the Social Security Administration's publication, the "Social Security Bulletin." It stated:

"Well over 60 per cent of all aged persons now have or soon will have some provision for medical costs in addition to that which they have under Medicare."

Most of the policies being purchased by the nation's senior citizens, according to the Institute, either pay for medical expenses not covered by Medicare; provide cash sums which can be used for expenses (medical or otherwise) incidental to illness; or in those few instances where persons are not eligible for the government program, pay for expenses which ordinarily would be covered by Medicare.

ON ADOLESCENCE

The teen-ager alternates between defiance of all parental authority and feeling guilty about his rebellion. He knows all the answers on such global matters as Vietnam and race relations but cannot decide what to wear to school.

...from CIBA Pharmaceutical Company publication.

* * *

An adolescent's worst enemy is his parents, and the only reason nothing very terrible happens during this civil war is that he grows up just in time.

...from same publication

* * *

Learning what it is that young people as a whole really want could be an enormously helpful guide to planning ahead. It would indicate how much substance there is to talk of a Generation Gap — and how much of it is twaddle.

...from Business in Brief. (Aug. 1968). The Chace Manhattan Bank.

Edalogy . . .
(Ethnic Medicine)

DIABETES MELLITUS AMONG THE NAVAJO

A retrospective analysis of the discharges over a five-year period, from the U.S. Public Health Service Indian Hospital in Fort Defiance, Arizona, confirmed the clinical impression that diabetes mellitus is a fairly common but extremely mild disorder among the Navajo Indians. Of 105 diabetics, only three had a history of ketonuria, and seven had retinopathy. The juvenile form of diabetes is unknown and not one case of ketoacidotic coma was observed. Thus abnormal glucose tolerance appears to be a relatively isolated, benign, chemical abnormality in the Navajo.

Plasma glucose and insulin concentrations were determined in a group of Navajo diabetics and controls following the oral administration of 100 gm. glucose. On the basis of the maximal rise in plasma glucose, the diabetics could be classified into two groups: those with severe, and those with mild carbohydrate intolerance. Navajo controls had a brisk rise in plasma insulin to a mean peak concentration of 141.2 micro-units per millileter Plasma insulin response of the diabetics with mild glucose intolerance was indistinguishable from that of the controls. Diabetics with marked glucose intolerance, however, had small and delayed rises in plasma insulin concentration. Markedly diminished carbohydrate intolerance in the Navajo appears to be secondary to a state of insulinopenia.

. . . Saiki, J. H., and Rimoin, D. L.: Arch. Intern. Med. 122:1, (July) 1968

* * *

UNUSUAL FEATURES OF VIRAL HEPATITIS IN ACCRA, GHANA

A study of viral hepatitis in Accra, Ghana, where it is a common and severe endemic disease, revealed several unusual clinical and histopathological features. Histopathological examination of the liver biopsy sections from 136 patients revealed a distinctive pattern characterized by a "glandular" transformation of hepatocytes, a high frequency of cholestasis, and a rarity of acidophilic bodies. Pregnant women had a higher complication rate than nonpregnant women and had a high fetal death rate. Patients had twice the expected frequency of erythrocytic G-6-PD deficiency, and those with the enzyme defect had a more prolonged and severe course. Jaundice was more pronounced in men than women and in the old than the young. The high acute coma and death rates were associated with immigration, lower economic standing, and pregnancy. Prolonged jaundice, on the other hand, could be atrributed to inherent biological factors such as age, sex, and G-6-PD deficiency.

. . . R. H. Morrow, Jr., et al.: Ann. Intern. Med. 68:1250, (June) 1968

* * *

HEPATOMA IN UGANDA

The incidence of hepatoma in Uganda was studied over a three-year period, 1964 to 1966, and 403 cases were collected from the Kamala Cancer Registry, the Makerere biopsy service, and personal visits to hospitals afound the country. The age peak was 35 to 45 years, and the male-female ratio was 3.3:1. Tribal rates indicated a significantly higher incidence in the immigrants of the Bantu tribes from Rwanda and Burundi and two Nilohamitic tribes of the Northeast than in neighboring and racially related tribes. Rates in other Bantu, Nilotic, and Nilohamitic tribes were remarkably similar, despite different dietary patterns and other ecological variables. Among possible environmental factors, fungal contamination with carcinogenic metabolites is suggested as a factor contributing to the high incidence of hepatoma.

. . . M. E. Alpert; M. S. R. Hutt, and C. G. Davidson: Lancet 1:1265, (June 15) 1968

* * *

ISRAEL IMMIGRANTS FROM IRAQ HAVE HIGHEST BRONCHIAL ASTHMA

A marked difference in the morbidity of bronchial asthma exists among the different ethnic communities that immigrated to Israel.

The rate of hospitalization in 1952-53 for persons born in Europe and America was 34 per 100,000, as against 40 for those from Morocco, 43 for those from Turkey, 64 for those from Yemen, and 125 for those from Iraq. In recent years there has been a definite decline in the severity of asthma among Iraqis and, consequently, the hospitalization rate has dropped, although the outpatient clinic rate is still high.

The marked familial incidence of bronchial asthma among the Iraqi Jews living in Israel may be explained in part by their tendency for inbreeding. However, the tendency for bronchial asthma among the Iraqis manifested itself mainly after they began living in Israel. This is due apparently to the fact that they came here from a dry inland climate to the humid Mediterranean coastal plain, which favors the growth of molds and hay fever plants and the development of respiratory infections.

However, the psychologic and physical stress as-

(Continued on Page 638)

Peripatetics

At a recent annual meeting of Butler Hospital the following slate of officers was elected for the year: MELVIN JOHNSON, president; MAX FAINTYCH, vice president; and GABRIEL A. NAJERA, secretary-treasurer.

* * *

JOHN C. O'BRIEN, recently returned from a tour of duty with the armed services, has joined the staff of the Rhode Island Hospital in the department of Roentgenology. Two additional new associate radiologists at the Rhode Island Hospital are DANIEL J. HANSON and ALFRED C. MOON, both formerly at the Roger Williams Hospital.

* * *

CARL TEPLITZ has come to the Rhode Island Hospital as associate pathologist from the position of a research associate at the Cell Biology Laboratories at Harvard University.

* * *

MELVIN D. HOFFMAN has completed his fourth year as Advisor to the Explorer Post of the Boy Scouts of America. During this time over a hundred and forty-one boys have been introduced to medicine by exploring the various facets of medical practice, including visits to specialized departments in the local hospitals.

* * *

PATRICIA FARNES has again been awarded a grant by the National Cancer Institute to complete the third year of a four year program of research under her direction at the Rhode Island Hospital.



* * *

The Rhode Island Thoracic Society, a section of the Tuberculosis Association, has for its new president GUY A. SETTIPANE who succeeds ROBERT W. RIEMER. RICHARD D. FRARY was elected a delegate at large to the Executive Committee of the Tuberculosis Association.

* * *

Our estimable librarian, HELEN DE JONG, an honorary member of the Rhode Island Medical Society, recently completed a visit to several Mediterranean countries, including Portugal, Spain, Greece, Yugoslavia, and Turkey. (See cut).

* * *

WALTER S. JONES, is president of the New England Obstetrical and Gynecological Society.

* * *

JOSEPH J. BAKER, Superintendent of Butler Hospital in Providence, has been cited by the American Medical Association for his assistance as a consultant on professional services.

An article in the first issue of the AMA Mental Health Newsletter, recently published, cites Doctor Baker for serving the AMA Department of Mental Health and the Council on Mental Health as a consultant on various aspects of their work.

It notes that Dr. Baker, who was formerly Commissioner of the Tennessee Department of Mental Health from 1959-65, is familiar with the problems of both public and private mental health operations and is "on call" to serve mental health committees of state medical societies.

During the past year, Dr. Baker has met with mental health commitees in North Carolina, Tennessee and Texas, and has represented the Department of Mental Health at meetings in various parts of the country.

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Contraindications: Glaucoma, prostatic hypertrophy, stenosing peptic ulcer, pyloroduodenal or bladder neck obstruction.

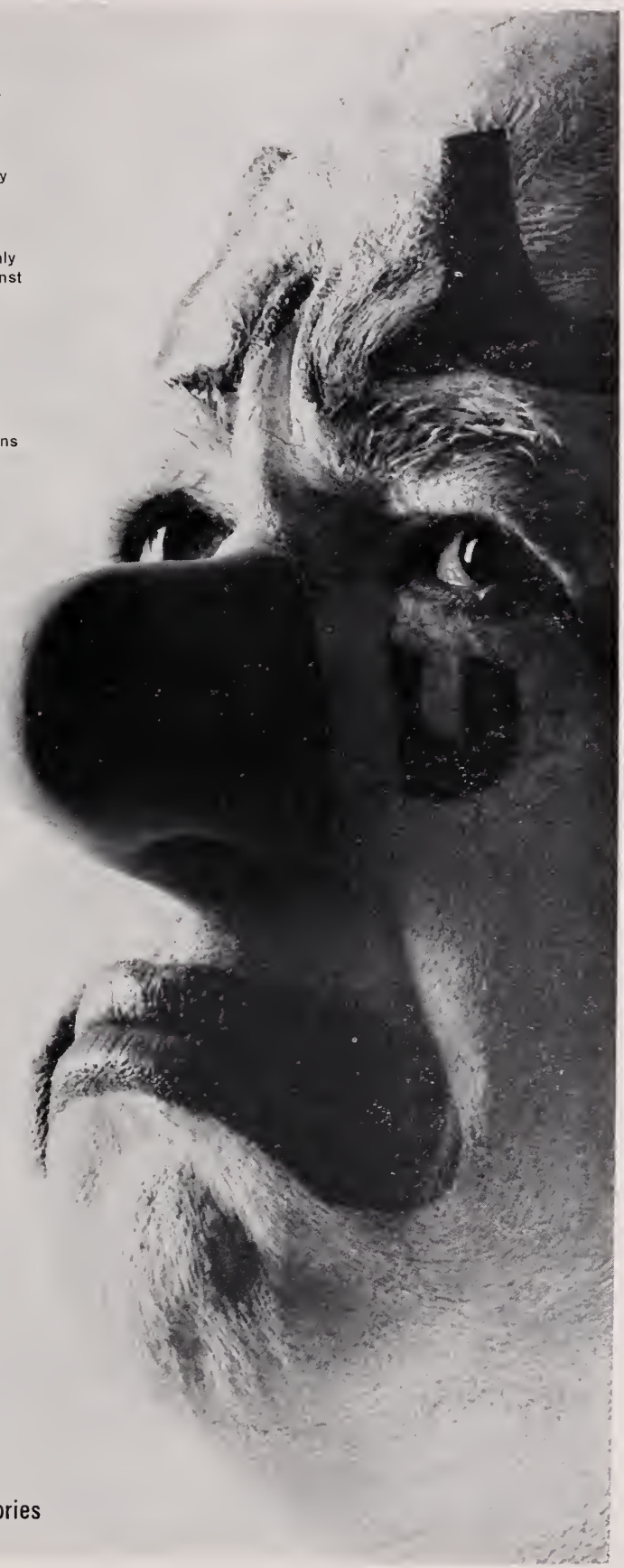
Precautions: Use cautiously in the presence of hypertension, hyperthyroidism, coronary artery disease; warn vehicle or machine operators of possible drowsiness.

Usage in Pregnancy: Use in pregnancy, nursing mothers and women who might bear children only when potential benefits have been weighed against possible hazards.

Note: The iodine in isopropamide iodide may alter PBI test results and will suppress I^{131} uptake; discontinue 'Ornade' one week before these tests.

Adverse Reactions: Drowsiness; excessive dryness of nose, throat or mouth; nervousness; insomnia. Other known possible adverse reactions of the individual ingredients: nausea, vomiting, diarrhea, rash, dizziness, fatigue, tightness of chest, abdominal pain, irritability, tachycardia, headache, incoordination, tremor, difficulty in urination. Thrombocytopenia, leukopenia and convulsions have been reported.

Supplied: Bottles of 50 capsules.



a stuffy nose is no laughing matter

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Each capsule contains 8 mg. of Teldrin® (brand of chlorpheniramine maleate), 50 mg. of phenylpropanolamine hydrochloride, and 2.5 mg. of isopropamide, as the iodide.

Spansule® Capsules

brand of sustained release capsules

each one can give him all-day or all-night relief of nasal congestion

SK&F Smith Kline & French, Laboratories

EDALOGY

(Continued from Page 635)

sociated with the adaption to a new cultural and social environment must also be taken in account.

. . . Reported by Irael Glazier of Tel Hashomer Government Hospital of Israel at the seventh Symposium of the Collegium Internationale Allergologicum held in Tel Aviv.

* * *

GENETIC LAG PLAGUES INDIAN SURVIVAL

The American Indian is afflicted with the diseases of modern Western man but retains the genetic heritage which permitted his survival through the ages. He survives, but suffers. He adapts, but both customs and genetics affect his well-being in the modern world.

The Pima Indians of Arizona are afflicted with a high incidence of diabetes and gall bladder disease. Many are obese, suggesting that the Indian's insulin-production system may not yet be adjusted to steady and plentiful diet. The Indians of Central and South America continue to suffer malnourishment and exposure to diseases for which they have little resistance. Civilization moves closer to the primitive tribes in the interior of South America.

Gall bladder disease is extraordinarily prevalent in Pima Indians in the Gila River Indian community of Arizona. Of 192 persons ages 15 to 74, gall bladder disease was found in 21 of 56 males (37.5 per cent), and 92 of 136 females (67.6 per cent.

In females, the prevalence of gall bladder disease was strikingly high after age 24. It reaches 92.6 per cent in females aged 65 and over. In Pima males, the disease frequently increases with age. In this group 66.7 per cent of those age 65 and over were found to be affected.

As other groups of American Indians appear to have a high prevalence of the disease, it is possible that American Indians have bile which differs genetically in its composition from that in other racial groups.

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The Pima have low levels of serum cholesterol, though their diet is high in saturated fats. An unusually efficient mechanism for clearing serum cholesterol mediated through exaggerated bilary excretion of cholesterol is a possibility.

Peptic ulcers are rare among Indians of the Southwest. This may be related to the excess of gall stones, as diminished gastric secretion has been described in patients with cholelithiasis.

In Central America, the nutrition problem is getting worse, though modern Indians are eating much the same diet as the pre-Columbian ancestors.

The Indian who has adopted some of modern society's dietary habits has the greatest nutritional deficiency. Those still living in primitive conditions are relatively well nourished.

The ancient Maya diet consisted largely of corn, supplemented by calcium in the lime water in which it was prepared, plus protein from occasional fish or meat. This diet was marginal, but adequate for adults. It did not supply adequate protein for children. Breast feeding for up to three years supplied this added protein. Modern Indian mothers have greatly shortened breast feeding. The diet of their children remains otherwise unchanged. This accounts for the keratomalacia, mucosal and cutaneous lesions, anemias, and other signs of serious malnutrition in many Central American Indian children.

. . . Extracted from reports presented at international meeting in Washington, D.C. on biomedical problems of the Indian.

* * *

HIGH INCIDENCE OF INTESTINAL DISORDERS LAID TO 'ECOLOGY'

The current high incidence of intestinal diseases may reflect a "disturbed ecology" of the human race.

It is difficult to believe that the great pathologists of the past could have missed such prevalent disorders as ileitis, colitis, granulomatous colitis, and diverticulitis if these diseases had been common or, in fact, if they had existed.

Where prior to about 1938 the beds of the hospitals were occupied predominantly by cases of gastric and duodenal ulcer, we now note the census of gastrointestinal cases as essentially intestinal. Office records of private patients include over 3,000 cases of ulcerative colitis, 1,100 cases of ileitis, and 260 instances of granulomatous colitis.

Such disorders as diverticulitis and diverticulosis were completely overlooked by earlier authorities. Osler's *Textbook of Medicine*, 1904, does not even recognize diverticulitis, and yet 5 to 10 per cent of the adult population on routine barium enema will demonstrate diverticula.

(Continued on next page)

STATEMENT ON INFLUENZA A_2 ASIAN VIRUS

The Council on Environmental and Public Health of the American Medical Association urges physicians to inform themselves as to the Public Health Service's recommendation for the use of influenza vaccines, and to see that the high-risk groups receive first consideration for vaccination. The Council also asks that individual practitioners report increased incidence of flu-like respiratory disorders promptly to the state health department for early identification of the causative virus.

The occurrence of a sizable outbreak of influenza in Hong Kong recently, due to a considerably altered strain of A_2 (Asian) influenza virus, has led to the prediction that the United States may experience extensive occurrence of influenza during the coming winter.

Currently available bivalent and polyvalent vaccines may provide only limited protection against the new strain, designated as A_2/Hong Kong/68. The Surgeon General of of the Public Health Service has urged licensed vaccine manufacturers to begin development and production of a monovalent vaccine containing A_2/Hong Kong/68 as soon as possible. It may take from 3 to 6 months to produce any substantial amount of the new vaccine.

Meanwhile, currently available vaccine should be administered to those groups at greatest risk of mortality or of serious complications of influenza, and these high-risk groups should be given the highest priority for receiving the new monovalent vaccine when it becomes available.

High-risk groups include persons over 45 years of age and even more notably for those over 65, and those individuals with chronic illnesses as defined below:

1) patients with rheumatic heart disease, especially with mitral stenosis;
2) patients with such cardiovascular disorders or arteriosclerotic heart disease and hypertension, especially showing evidence of frank or incipient cardiac insufficiency;
3) patients with chronic bronchopulmonary diseases such as asthma, chronic bronchitis, cystic fibrosis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, or pulmonary tuberculosis.

EDALOGY

This vast array of ulcerative, granulomatous, and diverticular diseases of the small bowel could not have eluded the exquisitely accurate studies of great medical scientists at the turn of the centry.

If these diseases did not exist, then they are new diseases. One cannot accept the view that the "upsurge" of these disorders could be laid to the stresses of the 20th century. Other centuries have also been marked by stress.

Is the causation of these diseases to be found in the food we eat? In the last decades of our ecology, our foods have contained multiple chemical preservatives; our growing crops are sprayed with insecticides. We ingest multiple new drugs never before used, such as the coaltar products of which aspirin and its derivatives are regular household remedies. The pollution of our drinking water may also be a factor.

Diverticulitis in Africa is 40 times more frequent among the white population than among native-born black controls. What is in the diet of the whites, Europeans, that is different from the rice or native diet of the plurality of the natives?

Why should ileitis be three times more frequent in Jews than in gentiles in the U.S.A.? Ileitis and colitis are relatively exceedingly scarce in the American Negro.

Since these diseases fall into none of the categories of bacterial or viral etiology, let us look further afield for their rapid evolution and spread into the disturbed ecology of the human race.

... Crohn, B. B., speaking in Prague, quoted by Medical Tribune

* * *

POPULATION CONTROL

New Delhi — Can a Moslem, with the maximum four wives allowed to him by religion and law, sire three children by each and still comply with the recommendation of India's family-planning program limiting families to three children? A member raised the question in Parliament and Health Minister S. N. Sinha, a non-Moslem, dodged the issue, saying he has not gone into mathematical calculations of plural marriages in relation to the population increase.

... Courtesy AP

ONE SENTENCE ESSAY

It is fairly easy to train doctors and engineers and it seems to me that no high degree of mental ability is necessary for either.

... James Michener, N.Y. Times.

DERMAQUIZ ANSWER

(See Page 595)

Left, Pustular Psoriasis. Right, Plantar Keratoderma (congenital).

POSTGRADUATE ASSEMBLY OF THE MEDICAL SOCIETIES OF NEW ENGLAND

At Boston, November 6, 7, 8

The annual New England Postgraduate Assembly, sponsored by the Council of the New England State Medical Societies, will be held at the Boston Statler hotel on November 6, 7, and 8.

An unusually fine program has been planned, and a copy will reach every member of the Rhode Island Medical Society prior to the Assembly. In view of the excellence of the clinical lecturers who have been assigned to discuss timely medical issues, it is hoped that a sizable representation of Rhode Island physicians will be in attendance.

The Wednesday afternoon session will be highlighted by a panel discussion of "Problems In Medical Gynecology," and by so-called "gem" lectures later in the afternoon on such topics as hepatitis, tuberculosis, obesity, and renal transplantation. Dr. John J. Cunningham, president of the Rhode Island Medical Society, will preside at the Wednesday luncheon session (November 6) at which Dr. Leonard W. Cronkite, Jr. general director of the Children's Medical Center, will speak on "Medical Care — Who Pays?". Dr. Dwight Wilbur, AMA president, will address the banquet in the evening.

Thursday morning a panel presentation on "Orthopedic Problems in Medical Practice" will be a feature, while the afternoon session will include discussion of such topics as common psychiatric problems, treatment of the alcoholic patient, and the treatment of depression. Dr. Jordan J. Cohen of R.I. Hospital will be one of the speakers.

Dr. Seebert J. Goldowsky, president-elect of the Council of the New England State Medical Societies, and editor of the Rhode Island Medical Journal, will preside at the Friday luncheon (November 8) at which Dr. Leona Baumgartner, visiting professor of social medicine at Harvard, will speak on "Bits and Pieces of Medicine." A cancer symposium in which Dr. Louis A. Leone, director of the department of oncology at Rhode Island Hospital, will participate, will conclude the assembly's three day program.

Seminar on Maternal and Infant Nutrition

(Open To All Members Of The Medical Profession)

DATE: Wednesday, November 20, 1968
PLACE: Nurses' Auditorium, St. Joseph's Hospital, Providence, R. I.

SCHEDULE:

Morning Program

9:00-9:30 — Coffee and Registration
9:30 — Greetings: Sister M. Columcille, O.S.F., Administrator, St. Joseph's Hospital
Walter Durkin, M.D., Chief of Obstetricts, St. Joseph's Hospital
9:45 — "Nutritional Status of Pregnant Women in the U. S."
Winslow T. Tompkins, M.D., Obstetrical Consultant to Children's Bureau, Washington, D. C.
11:25 — Moderator Comments — R. Cordon Douglas, M.D.
Lying In Hospital
Providence, R. I.
11:45 — Question Period

LUNCH — 12:45 to 1:35 — Hospital Cafeteria*

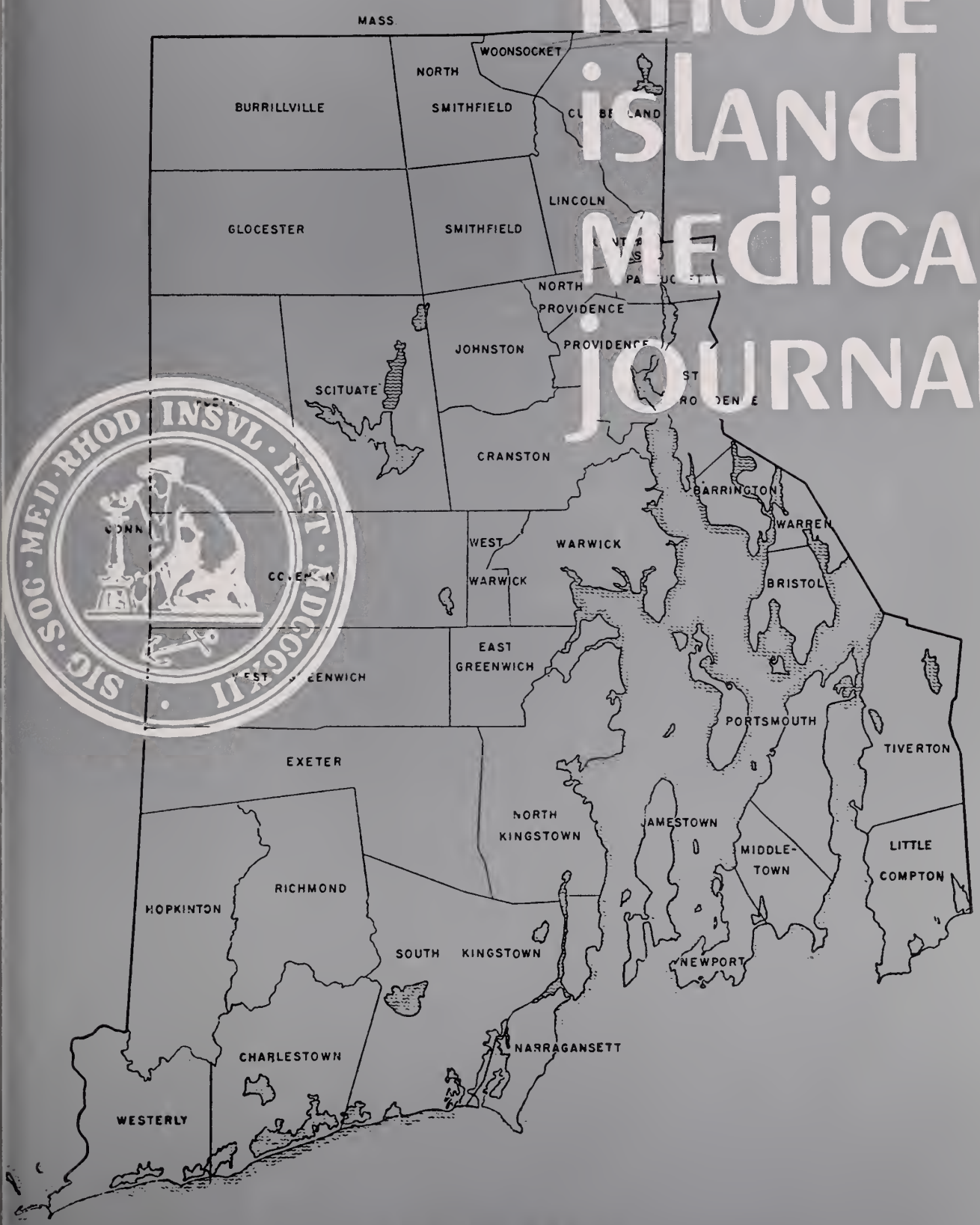
Afternoon Program

1:45 — "Nutritional Status of Infants in the U. S."
Samuel J. Fomon, M.D., Department of Pediatrics, University of Iowa
3:25 — Moderator Comments — Edward M. Sears, M.D.
Harvard University
Boston, Massachusetts
3:45-4:15 — Question Period

(*Physicians planning to attend the luncheon may send a check payable to St. Joseph's Hospital ($2.50 for roast beef; $2.25 for ham; to the hospital, c/o Robert Barone, M.D.)

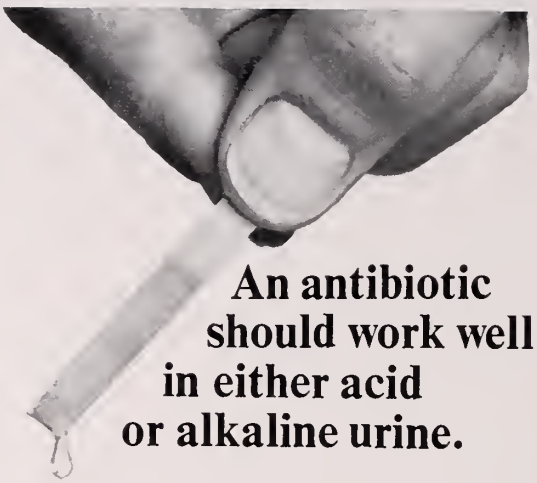
VOL. LI, NO. 11 NOVEMBER, 1968

Rhode Island Medical Journal



SOC. MED. RHOD. INSVL. INST. INDOCTI

CANCER ISSUE



An antibiotic should work well in either acid or alkaline urine.

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Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system – anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin – maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney – rise in BUN, apparently dose-related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth – dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; Tablets: film coated – 300 mg, 150 mg and 75 mg of demethylchlortetracycline HCl.

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The RHODE ISLAND MEDICAL JOURNAL

Vol. LI, No. 11 November, 1968

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The First Samuel Adelson Memorial Lecture:

PERSPECTIVES IN CANCER CONTROL

. . . *Given The Time And The Resources Science Will Sooner Or Later Prevail . . .*

Charles S. Cameron, M.D. 663

A REPORT OF FIVE YEAR SURVIVAL RATE: TEN MALIGNANT TUMORS — 1956-1960

. . . *Results Of Treatment Compare Favorably With Those Reported From Ten Other Registries. . .*

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Knee-deep

in osteoarthritic pain

If aspirin doesn't help, move in with Tandearil.

The trial period is brief: 1 week. Try one tablet q.i.d. at first. Tandearil usually starts working within 3 to 4 days. When response occurs, as little as 1 or 2 tablets daily may hold back pain and stiffness, and increase joint motion.

On the next page is a summary of adverse reactions, contraindications, warning and precautions.

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It can help get his mind off his knee.

Please review full Prescribing Information carefully before prescribing.

For osteoarthritic knees, spines, shoulders, hips, etc.:

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Tandearil, oxyphenbutazone:
For brief summary see next page.

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oxyphenbutazone

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: This drug is an analog of phenylbutazone; sensitive patients may be cross-reactive. If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy, and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia), sudden weight gain (water retention), skin reactions, black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension, the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to a serum sickness syndrome may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: Initial: 3 to 6 tablets daily in divided doses. Usually unnecessary to exceed 4 tablets daily. A trial period of one week is considered adequate to determine the therapeutic effect of the drug. Maintenance: Effective level often achieved with 1 or 2 tablets daily, should not exceed 4 tablets daily.

In selecting appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response.

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Indications: Mental depression and mild anxiety accompanying depression.

Contraindications: Glaucoma and predisposition to urinary retention. Not recommended in pregnancy.

Precautions and Side Effects: Drowsiness may occur within the first few days of therapy. Patients should be warned against driving a car or operating machinery or appliances requiring alert attention. When depression is accompanied by anxiety or agitation too severe to be controlled by ELAVIL HCl alone, a phenothiazine tranquilizer may be given concomitantly. Suicide is always a possibility in mental depression and may remain until significant remission occurs. Supervise patients closely in case they may require hospitalization or concomitant electroshock therapy. Untoward reactions have been reported after the combined use of antidepressant agents having varying modes of activity. Accordingly, consider possibility of potentiation in combined use of antidepressants. Monoamine oxidase inhibitor drugs may potentiate other drugs and such potentiation may even cause death; permit at least two weeks to elapse between administration of two agents; in such patients, initiate therapy with ELAVIL HCl cautiously with gradual increase in dosage required to obtain a satisfactory response. Caution patients about errors of judgment due to change in mood, and that the response to alcohol may be potentiated. May provoke mania or hypomania in manic-depressive patients.

Side effects include drowsiness; dizziness; nausea; excitement; hypotension; fine tremor; jitteriness; weakness; headache; heartburn; anorexia; increased perspiration; incoordination; allergic-type reactions manifested by skin rash, swelling of face and tongue, itching; numbness and tingling of limbs, including peripheral neuropathy; activation of schizophrenia which may require phenothiazine tranquilizer therapy; epileptiform seizures in chronic schizophrenics; temporary confusion, disturbed concentration or, rarely, transient visual hallucinations on high doses; evidence of anticholinergic activity, such as tachycardia, dryness of the mouth, blurring of vision, urinary retention, constipation; paralytic ileus; jaundice; agranulocytosis.

Careful observation of all patients is recommended. The antidepressant activity may be evident within 3 or 4 days or may take as long as 30 days to develop adequately, and lack of response sometimes occurs. Response to medication will vary according to severity as well as type of depression present. Elderly patients and adolescents can often be managed on lower dosage levels.

Supplied: Tablets ELAVIL HCl, containing 10 mg., 25 mg., and 50 mg. amitriptyline HCl, bottles of 100 and 1000; Injection ELAVIL HCl, in 10-cc. vials, containing per cc.: 10 mg. amitriptyline HCl, 44 mg. dextrose, 1.5 mg. methylparaben, and 0.2 mg. propylparaben.

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WHERE TODAY'S THEORY IS TOMORROW'S THERAPY

Book Reviews . . .

DECISION MAKING IN NATIONAL SCIENCE POLICY. A Ciba Foundation and Science of Science Foundation Symposium. Edited by Anthony De Reuck, Maurice Goldsmith and Julie Knight. Little, Brown and Company, Boston, 1968. $12.00

The Ciba Foundation* and the Science Foundation* have together organized this symposium and produced this volume. It will be of interest not only to scientists involved in basic and applied research but also to all whose interests and activities deal with the social implications of the application of technical development based in scientific advance and the cost of such development. Sociologists, manufacturers, business men and politicians all become involved. In the final analysis the amount of financial support available for scientific and technological projects must depend on the importance of advance in these fields in the eyes of those who hold the purse strings. In the case of projects supported by government this means the politicians. Such a problem, for example, might be the decision as to what should be allotted to the study and technical development needed to put a man on the moon compared to the creation of better living conditions and educational opportunities for underprivileged citizens.

Space will not permit a review of the contribution of each of the distinguished speakers in this world wide symposium. It is clear that in every case the individual who was selected to discuss the situation in his country represented a highly competent person who was well aware of the situation in his home-land and its relation to the rest of the world. As Lord Todd said in his introduction, "We are reaching a stage at which an individual country will have to decide whether it will devote its main effort to certain fields and have little to do with others or spend its resources so thinly over every area of science that it makes no serious impact on any of them."

Following the introduction by Lord Todd are two excellent contributions. The first, entitled "Scientists in the Arena," is a lecture by Sir Solly Zuckerman which was delivered at the Royal Institute in London on April 10, 1968. Next is a shorter article by Alvin M. Weinberg of the United States, "The Philosophy and Practice of Natural Science Policy." This is followed by a discussion in which several of the members or the group, including Dr. Rahman of New Delhi, participated. To both of these presentations there are attached ample references.

Following these three presentations there are four, under the general heading "Evaluation of Research Productivity." James B. Adams of the United Kingdom discusses science in relation to the university, to industry and to government with especial reference to the "input," usually trained scientists and money, to the "output," i.e. the results accomplished, which naturally differ in the three fields mentioned though they are all closely related.

C. D. Foster of London, whose subject is cost benefit analysis in research, points out that cost-analysis is not applicable to basic research but is valuable when research is "applied." He states that "cost-benefit analysis is of ". . . value as it is the act or art of calculating the rate of return on investment when the purely financial rate of return is thought to be a wrong or misleading criterion." This address was followed by an interesting discussion.

Russel L. Ackoff spoke on "Operational Research and National Science Policy." He discusses the value of experimenting in the field of applied research and technology with examples of favorable results. A. E. Pannenborg of the Netherlands continues the discussion. His title is "Decision Making in Research Policy at the Industrial Level." He points out the value of research to an industry and warns against following "fashion in science" by working on problems that are being overworked throughout the world. The general discussion that follows these two presentations is of interest. It indicates that the decision to allocate funds to research must depend on the financial condition of countries and their industries. It also makes it clear that political influence and general national policies are important factors.

The second main section of the symposium is entitled "Science Policy in Mixed Economies." In this area are discussed the situation in France, Sweden, the United States and Canada. There are presented broad statements of policy with reference to the varied agencies of government, education and industry. There are digressions into various phases of the problems that arise in these countries. Following the article on Canadian Science Policy there is general discussion of basic and applied research.

(Continued on Page 649)

*Ciba Foundation "opened in 1949 to promote international cooperation in medical and chemical research," and the Science of Science Foundation, inaugurated in 1964, whose purpose it is "to promote the scientific investigation of science itself.'

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Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

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Before writing it for your patients, please check the Prescribing Information. It's summarized on the next page.

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chlorthalidone

Indications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic diseases.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small-bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has been required frequently and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Use with caution in pregnant women and nursing mothers since the drug may cross the placental barrier and appear in cord blood and since thiazides may appear in breast milk. The drug may result in fetal or neonatal jaundice, thrombocytopenia, and possibly other adverse reactions which have occurred in the adult. When used in women of childbearing age, balance benefits of drug against possible hazards to fetus.

Precautions: Antihypertensive therapy with this drug should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents, other potent antihypertensive drugs or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.

Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, the drug should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, glycosuria, hyperuricemia, headache, muscle cramps, orthostatic hypotension, which may be potentiated when chlorthalidone is combined with barbiturates, narcotics or alcohol, aplast anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashe urticaria, purpura, necrotizing angiiti acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.

Average Dosage: 50 or 100 mg. with breakfast daily or 100 mg. every othe day.

Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000.

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For full details, please see the complete prescribing information.

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BOOK REVIEW

(Continued from Page 648)

The next major section takes up "Science Policy in Planned Economies." In this situation the Soviet Union, Hungary and Czechslovakia are covered. The discussion of science in the Soviet Union does not appear to this reviewer to give one any definite information as to the policy and planning of scientific activities in that country.

The story in Hungary is that of an uphill fight after the devastation of World War II. Eventually a single body, the Academy of Science, was established and was entrusted with the planning of all types of research — academic, governmental, industrial, agricultural and others. The problems in Czechoslovakia are also reviewed.

The last major section is called "Science Policy in Developing Countries." Latin America, with special reference to Argentina, is the first area considered. The past ten years are said to have shown "significant progress" in scientific research. The National Council of Scientific and Technical Research and other agencies have resulted in marked increase in scientific work. Various agencies in particular have been of primary importance.

Two other countries are discussed — India and Israel. In India the transformation of research from the "level of individual effort to the level of national industry," so complete in advanced countries, has just begun. The steps needed to accomplish this transformation are listed.

Israel, a small country and obviously not a typical one, presents an interesting study and very special problem. The combination of highly trained and experienced individuals with the large number of the ignorant and untrained who have come as immigrants, poses special problems. These are reviewed at some length. A general discussion of science policy in developing countries follows.

The last nineteen pages of the book include an eight-page article by R. Aron of France entitled "Applying First Principles," followed by the final topic "Future Tasks of the Science of Science." In this, nine of the participants of the symposium take part. Many phases of the problem of developing the science of science on an international scale are taken up.

Although "Decision Making in National Science Policy" is the topic, the discussion of which has been carried on with side-lights on the situation in nations of various types, it is finally admitted that the criteria needed to allow real solution of the problems are not yet available. Nevertheless, much has been accomplished.

More *basic* research is required. *Basic* science of science must come before applied science of science. As Dr. Goldsmith, Director of the Science of Science Foundation, points out, *scientists* of science will begin to appear. They will advance science in relation to the socio-political problems that must be faced.

The book is not easy reading as it contains page after page of discussions and arguments as they took place, presented by the earnest, experienced and often enthusiastic participants in the symposium. It does, however, present a world picture of its subject which may well be observed and appreciated by policiticians, industrialists and university officials as well as by scientists.

ALEX. M. BURGESS, M.D.



HOW'S THAT AGAIN?

In the psychic economy of the nuclear family each spouse played a reciprocal role to the other.
. . . from the book "Sickness and Society"
by R. S. Duff and A. B. Hollingshead.

DERMAQUIZ

Conducted by FRANCESCO RONCHESE, M.D.



At left, black spots, raw skin, itching, pain, duration a few weeks.
At right, black spots, smooth skin, no itching or pain, duration months.

(Answer on Page 697)

THE CLINICAL DIABETES ASSOCIATION OF RHODE ISLAND

"PROINSULIN. OBESITY AND DIABETES"

JOHN N. FAIN, Ph.D.
Associate Professor of Medical Science, Brown University

Tuesday, December 10, 1968 at 8:00 P.M.

Brown University, Barus-Holley Bldg., Room 168

All Physicians and Medical Students are Cordially Invited.

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SCANNING THE MEDICAL LITERATURE

THE CARPAL TUNNEL SYNDROME. Henry M. Litchman; M. Howard Triedman; Carroll M. Silver, and Stanley D. Simon. Int. Surg. 50: 269, 1968

The authors reviewed a consecutive series of 45 cases treated surgically from 1962 to 1967 and summarize their findings following a study of these cases. Analysis of the authors' experience reveal that the condition was more common than usually thought, as it was frequently misdiagnosed as cervical nerve root compression or a diffuse peripheral neuritis. It was pointed out that the symptoms are peripheral (in the hand) and that pain and paresthesias are more prominent than motor dysfunction, secondary to compression of the median nerve in the carpal tunnel.

Electrodiagnostic studies were shown to be valuable in the selection of cases for surgery and helpful in the objective evaluation of results. Measurements of nerve latency were especially helpful in distinguishing between the neuropathy of diabetes and the carpal tunnel syndrome. Surgical treatment was found to be an effective means of relief of symptoms in cases that failed to respond to conservative treatment, and the surgical technique and principles of after care were outlined by the authors.

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Contraindications: Hypersensitivity to tetracycline.

Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.

Precautions: Nonsusceptible organisms may overgrow; treat superinfection appropriately. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

Side Effects: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity reactions*—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

Upon adverse reaction, stop medication and treat appropriately.

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uspected tetracycline-sensitive infection?

Vhile waiting for the results of the sensitivity test, tart the therapy likely to succeed...

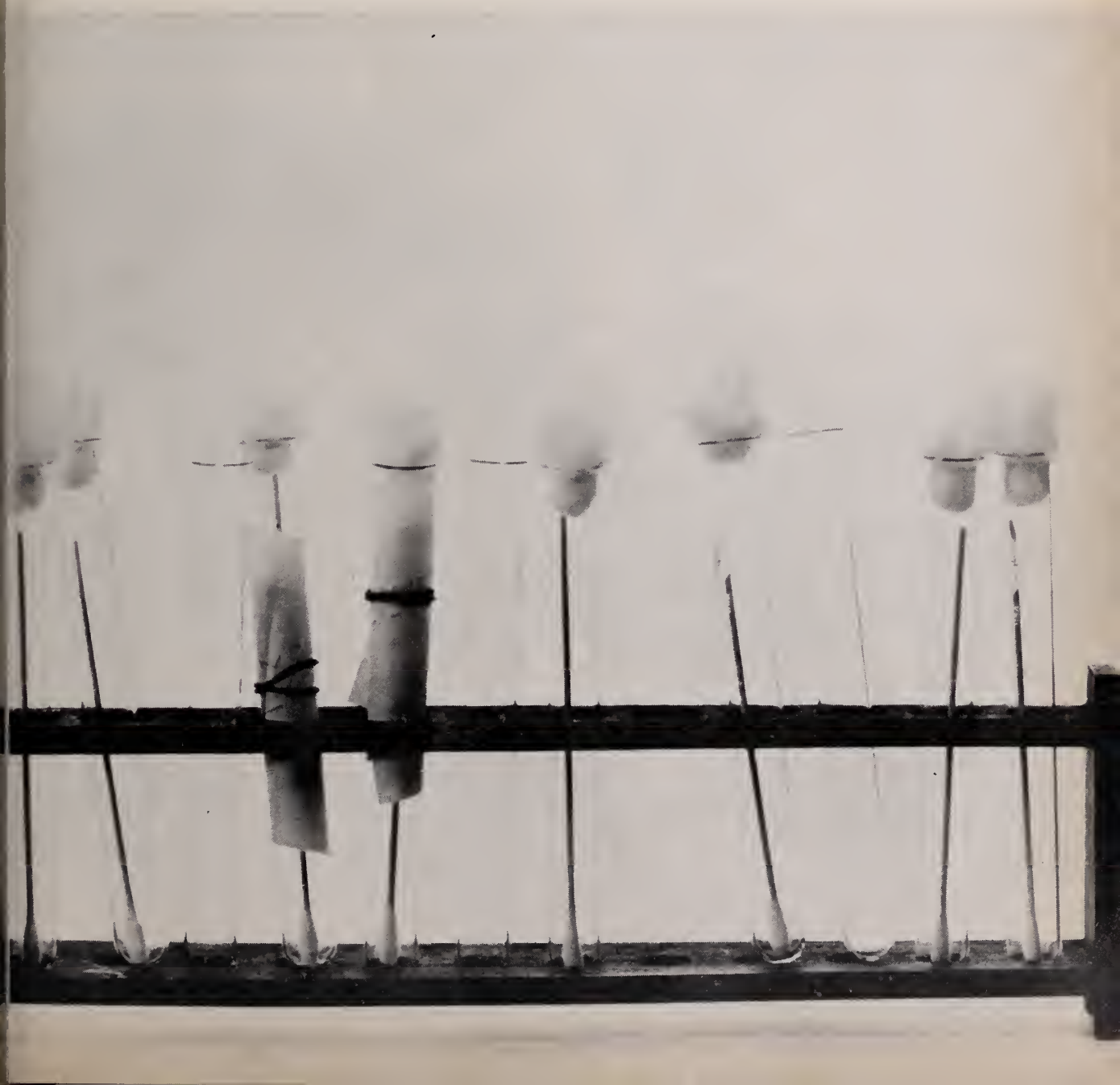
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Novahistine LP tablets are most useful for relief of nasal congestion in patients without pain or fever.

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Use cautiously in patients with severe hypertension, diabetes mellitus, hyperthyroidism or urinary retention. Caution ambulatory patients that drowsiness may result.

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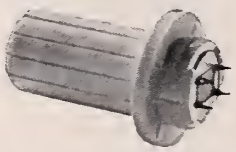
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In the complex picture of moderate to severe anxiety...



here is a new reason for prescribing Mellaril (Thioridazine HCl)

effectiveness in mixed anxiety-depression

Long recognized for its usefulness in the treatment of moderate to severe anxiety, Mellaril is now also known to be effective against mixed anxiety-depression.

Often the symptoms of anxiety states are difficult to sort out—even with the most careful probing. The patient may manifest symptoms of agitation, restlessness, insomnia, somatic complaints. But what of the depression that may be mixed in the total picture? It is reassuring to know that Mellaril may be prescribed—with strong possibilities of success—when there is anxiety alone or a mixture of anxiety and depression.

Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. The following is a brief precautionary statement.

Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

Mellaril®
(Thioridazine HCl)
25 mg. t.i.d.

for moderate to severe anxiety and mixed anxiety-depression

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But please don't forget this:

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of the alka formulation are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. Patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.



Dosage in Painful Shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

In selecting the appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response.

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When you diagnose depression, Tofrānil may be indicated for relief.

As maintenance therapy during the active phase of depression, Tofrānil can often help prevent relapse.

The use of Tofrānil in patients receiving M.A.O.I.'s is contraindicated. In patients with cardiovascular disease, thyroid disorders, increased intraocular pressure; in those receiving anticholinergics (including antiparkinsonism agents), thyroid medication or antihypertensive adrenergic neuron-blocking agents; and in those in their first trimester of pregnancy–the special precautions listed in the Prescribing Information should be carefully observed.

Toxic reactions severe enough to require discontinuation of Tofrānil are uncommon. However, for complete details, please refer to the complete Prescribing Information.

Turn page for brief summary of Prescribing Information.

Tofrānil® imipramine hydrochloride
Geigy

in depression





Tofrānil® Geigy

imipramine
hydrochloride

Tofrānil®, imipramine hydrochloride
Indications: Tofrānil is recommended for the treatment of depressive states of diverse psychopathology.
Contraindications: The concomitant use of this agent and monoamine oxidase inhibiting (M.A.O.I.) compounds is contraindicated. Hyperpyretic crises or severe convulsive seizures may occur. Potentiation of adverse effects can be serious or even fatal. An interval of at least 7 days after M.A.O.I. therapy has been discontinued should be allowed before this drug may be substituted. Initial dosage should be low, increases should be gradual, and the patient's progress should be carefully observed.
Warning: Clinical reports have suggested that there may be a risk of teratogenesis associated with the use of this compound during the first trimester of pregnancy. Unless, in the opinion of the prescribing physician, the potential benefits outweigh the possible risks, it should not be used during the first trimester of pregnancy. Cardiovascular complications, including myocardial infarction and arrhythmias, have occasionally occurred in susceptible individuals. Patients with cardiovascular disease should be given the drug only under careful observation and in low dosage.
Precautions: Since suicide is always a possibility in severely depressed patients and one which may persist until significant remission occurs, such patients should be carefully supervised during early treatment. Some severely depressed patients may also require hospitalization and/or concomitant electroconvulsive therapy. Because of its anticholinergic effect, caution should be observed in prescribing the drug for patients with increased intraocular pressure.
In rare instances, transient cardiac arrhythmias have occurred in hyperthyroid patients and in patients receiving thyroid medication when this compound was added to the regimen. Imipramine may block the pharmacologic activity of guanethidine and other related adrenergic neuron-blocking agents.
The drug is not recommended at the present time in patients under 12 years of age.
Adverse Reactions: Dryness of the mouth, tachycardia, constipation, disturbances of accommodation, sweating, dizziness, weight gain, urinary frequency or retention, nausea and vomiting, peripheral neuritis, mild parkinson-like syndrome, tremors, rare cases of falling in elderly patients, confusional states (with such symptoms as hallucinations and disorientation), activation of psychosis in schizophrenics and agitation (including hypomanic and manic episodes) which may require dosage reduction and/or addition of a tranquilizer or temporary discontinuation of the drug, epileptiform seizures, orthostatic hypotension and substantial blood pressure fall in hypertensive patients, purpura, transient jaundice, bone marrow depression including agranulocytosis, sensitization and skin rash including photosensitization, eosinophilia, and mild withdrawal symptoms on sudden discontinuation after prolonged treatment with high doses. Occasional hormonal effects (impotence, decreased libido, and estrogenic effects) may be observed. Atropine-like effects may be more pronounced (e.g. paralytic ileus) in susceptible patients and in those using anticholinergic agents (including antiparkinsonism drugs).
Outpatient Adult Dosage: Initially, 75 mg. daily, increased, if necessary, to 150 or 200 mg. Maintenance dosage may be lower, 50 to 150 mg. daily, if possible.
Geriatric and Adolescent Dosage: Initially, 30 or 40 mg. daily, which may be increased according to response and tolerance. It is usually unnecessary to exceed 100 mg. daily.
A lag in therapeutic response, lasting from a few days to a few weeks, should be expected. When dosage recommendations are already being followed, increasing the dosage does not normally shorten this latency period and may increase the incidence of adverse reactions.
Availability: Round tablets of 25 and 50 mg.; triangular tablets of 10 mg. for geriatric and adolescent use; and ampuls, each containing 25 mg. in 2 cc. for I.M. administration.
(B)R-46-850-C

For complete details, please refer to the full Prescribing Information.

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Contraindications: Dextro-amphetamine sulfate: In hyperexcitability and in agitated prepsychotic states. Previous allergic or idiosyncratic reactions to meprobamate.
Precautions: Use with caution in patients hypersensitive to sympathomimetic compounds, who have coronary or cardiovascular disease, or are severely hypertensive.

Dextro-amphetamine sulfate: Excessive use by unstable individuals may result in psychological dependence.

Meprobamate: Careful supervision of dose and amounts prescribed is advised, especially for patients with known propensity for taking excessive quantities of drugs. Excessive and prolonged use in susceptible persons, e.g. alcoholics, former addicts, and other severe psychoneurotics, has been reported to result in dependence on the drug. Where excessive dosage has continued for weeks or months, reduce dosage gradually. Sudden withdrawal may precipitate recurrence of preexisting symptoms such as anxiety, anorexia, or insomnia; or withdrawal reactions such as vomiting, ataxia, tremors, muscle twitching and, rarely, epileptiform seizures. Should meprobamate cause drowsiness or visual disturbances, reduce dosage and avoid operation of motor vehicles, machinery or other activity requiring alertness. Effects of excessive alcohol consumption may be increased by meprobamate. Appropriate caution is recommended with patients prone to excessive drinking. In patients prone to both petit and grand mal epilepsy meprobamate may precipitate grand mal attacks. Prescribe cautiously and in small quantities to patients with suicidal tendencies.
Side Effects: Overstimulation of the central nervous system, jitteriness and insomnia or drowsiness. Dextro-amphetamine sulfate: Insomnia, excitability, and increased motor activity are common and ordinarily mild side effects. Confusion, anxiety, aggressiveness, increased libido, and hallucinations have also been observed, especially in mentally ill patients. Rebound fatigue and depression may follow central stimulation. Other effects may include dry mouth, anorexia, nausea, vomiting, diarrhea, and increased cardiovascular reactivity.

Meprobamate: Drowsiness may occur and can be associated with ataxia; the symptom can usually be controlled by decreasing the dose, or by concomitant administration of central stimulants. Allergic or idiosyncratic reactions: maculopapular rash, acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever, transient leukopenia. A case of fatal bullous dermatitis, following administration of meprobamate and prednisolone, has been reported. Hypersensitivity has produced fever, fainting spells, angioneurotic edema, bronchial spasms, hypotensive crises (1 fatal case), anuria, stomatitis, proctitis (1 case), anaphylaxis, agranulocytosis and thrombocytopenic purpura, and a fatal instance of aplastic anemia, but only when other drugs known to elicit these conditions were given concomitantly. Fast EEG activity, usually after excessive dosage. Impairment of visual accommodation. Massive overdosage may produce drowsiness, lethargy, stupor, ataxia, coma, shock, vasomotor and respiratory collapse.

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Contraindications: Infections caused by nonsusceptible organisms; history of penicillin sensitivity.
Warnings: Acute anaphylaxis (may prove fatal unless promptly controlled) is rare but more frequent in patients with previous penicillin sensitivity, bronchial asthma or other allergies. Resuscitative (epinephrine, aminophylline, pressor amines) and supportive (antihistamines, methylprednisolone sodium succinate) drugs should be readily available. Other rare hypersensitivity reactions include nephropathy, hemolytic anemia, leucopenia and thrombocytopenia. In suspected hypersensitivity, evaluation of renal and hematopoietic systems is recommended.
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.
Adverse Reactions: (Penicillin has significant index of sensitization): Skin rashes, ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; serum sickness-like reactions, including chills, fever, edema, arthralgia and prostration. Severe and often fatal anaphylaxis has been reported (see "Warnings").
Composition: Tablets—125 mg. (200,000 units), 250 mg. (400,000 units), 500 mg. (800,000 units); Liquid—125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc.

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Warning: May be habit forming.

Usual Adult Dosage: As a daytime sedative, 15 mg. (¼ gr.) to 30 mg. (½ gr.) t.i.d. or q.i.d.

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Peripatetics

Nineteen new physicians have been elected to active membership in the Providence Medical Association. Th men and their fields of interests are: MOHAMMED ABIRI, General Surgery; JOSEPH A. CHAZAN, Internal Medicine; IRAEL DIAMOND, Pathology; EDWIN N. FORMAN, Pediatrics, Hematology; NABIL Y. KHOURY, Obstetrics and Gynecology; AMIR H. MISSAGHIAN, Pediatrics; SAMIR G. MOUBAYED, Obstetrics and Gynecology; WILLIAM A. O'NEIL, Neurology; ROBERT R. ROCKLIN, Psychiatry; TADEUSZ ROZYCKI, Pediatrics; ELIA SHAMMAS, Psychiatry; KARL F. STEPHENS, Ophthalmology; RICHARD L. TESTA, General Surgery; JOHN A. TOMEI, Radiology; GERONIMO S. TORRES, Psychiatry; HENRY S. M. UHL, Internal Medicine; ELLIOTT B. URDANG, Child Psychiatry; JOEL K. WELTMAN, Immunology; CONRAD W. WESSELHOEFT, JR., Pediatric Surgery.

* * *

A. A. SAVASTANO, Surgeon-in-Chief of the Department of Orthopedics and Fractures at the Rhode Island Hospital, recently had as his guest Surgeon-in-Chief Pro Tempore, H. RELTON McCARROLL, Associate Professor of Clinical Orthopaedics at Washington University School of Medicine. Professor McCarroll delivered the Murray S. Danforth Oration and the combined Grand Rounds of the Medical, Surgical and Orthopedic Departments at the Rhode Island Hospital.

* * *

New appointments at the Notre Dame Hospital in Central Falls include AMBROSE G. BARRY to the Courtesy Staff in Internal Medicine. and KHALIL SHEKARCHI to the Active Staff in Surgery.

The new officers of the Staff Association at the Notre Dame Hospital are RICHARD G. BERTINI, President; JAROSLAW KOROPEY, Vice President; PAUL B. METCALF, JR., Secretary-Treasurer; and EUGENE E. GAUDET and FERDINAND S. FORGIEL, Members- at-Large to the Executive Committee.

* * *

HARRY W. CARTER has recently joined the staff of the Roger Williams Hospital as Associate Pathologist, having left the Deaconess Hospital in Boston, where he has been for the past five years.

* * *

R. CANNON ELEY was recently heard on "Talk Back" on WJAR TV.

* * *

WILLIAM A. MARSHALL, now on active duty in the armed forces, is currently stationed at the Naval Hospital, Norfolk, Virginia. JOHN B. MONTGOMERY is stationed at Camp Gordon Hospital, Augusta, Georgia.

* * *

New appointments to the Staff at the Rhode Island Hospital have been announced as follows: SAMIR G. MOUBAYED, Gynecology; AMIR H. MISSAGAGHIAN, Pediatrics; KARL F. STEPHENS, Ophthalmology; RICHARD F. JUDKINS, Otolaryngology; CONRAD W. WESSELHOEFT, Surgery; ALFRED C. MOON and DANIEL J. HANSON, Roentgenology; FRANK W. SULLIVAN and ELMAR KURZBACH, Neurology and Psychiatry; and CARL TEPLITZ, Pathology.

ROCCO MARZILLI in Medicine and VITALIJS KASPARI in Urology have joined the Courtesy Staff, and to the Consulting Staff have been added JOSEPH J. BAKER, MAURICE W. LAUFER, and HAROLD W. HARROWER.

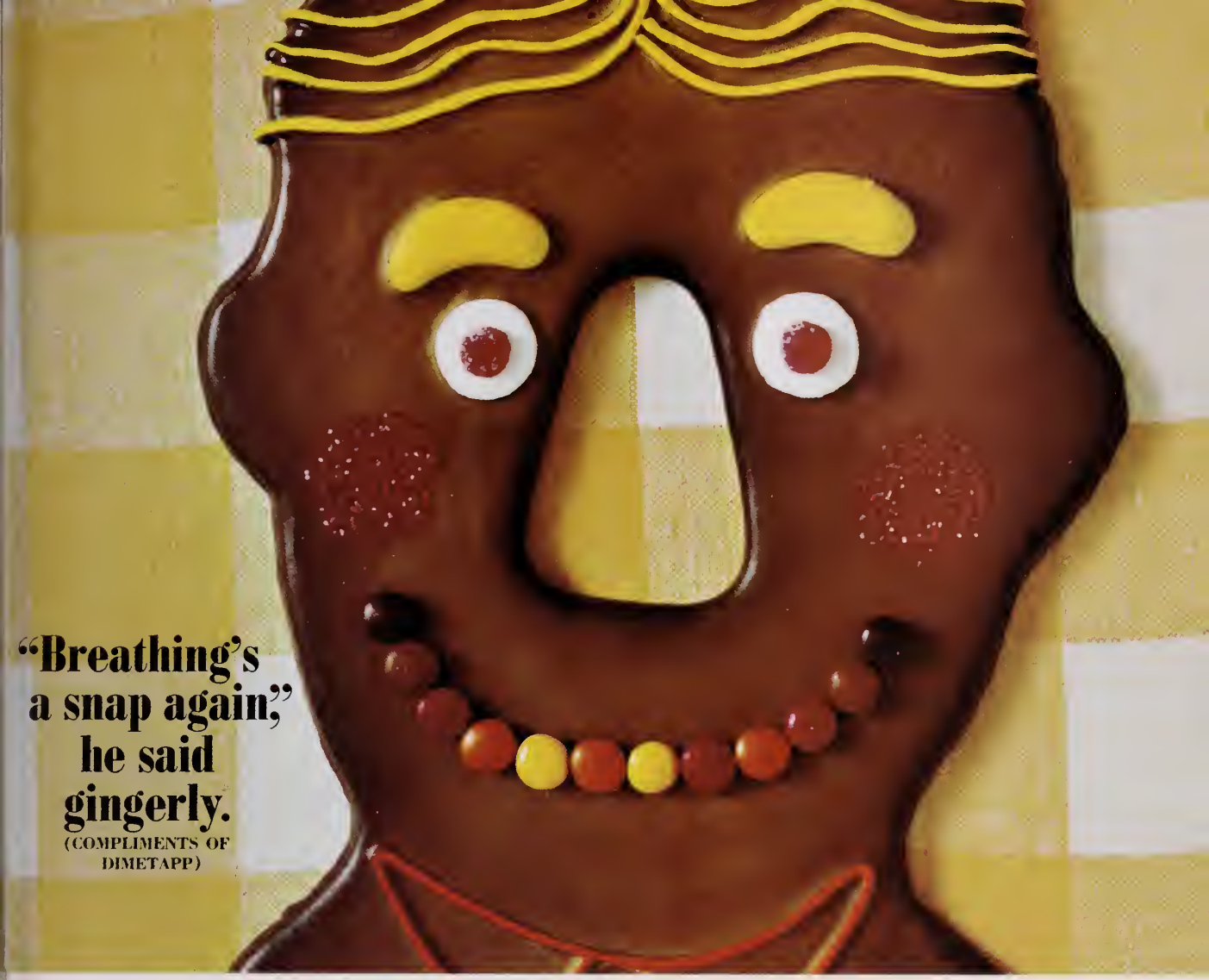
* * *

There was a virtual exodus of Rhode Island surgeons to the recent Clinical Congress of the American College of Surgeons in Atlantic City. Your reporter stopped counting at twenty-nine. The operating rooms in Rhode Island Hospital must have been quiet during that week. The delegation from Rhode Island was headed by THOMAS PERRY, JR., the College governor for the Rhode Island area. Admitted to the College this year from Rhode Island were: FRANCO ERCULEI, AMEDEO L. MARIORENZI, and RICHARD W. PERRY.

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Precautions: Until patient's response has been determined, he should be cautioned against engaging in operations requiring alertness. Administer with care to patients with cardiac or peripheral vascular diseases or hypertension.
Side Effects: Hypersensitivity reactions including skin rashes, urticaria, hypotension and thrombocytopenia, have been reported on rare occasions. Drowsiness, lassitude, nausea, giddiness, dryness of the mouth, mydriasis, increased irritability or excitement may be encountered.
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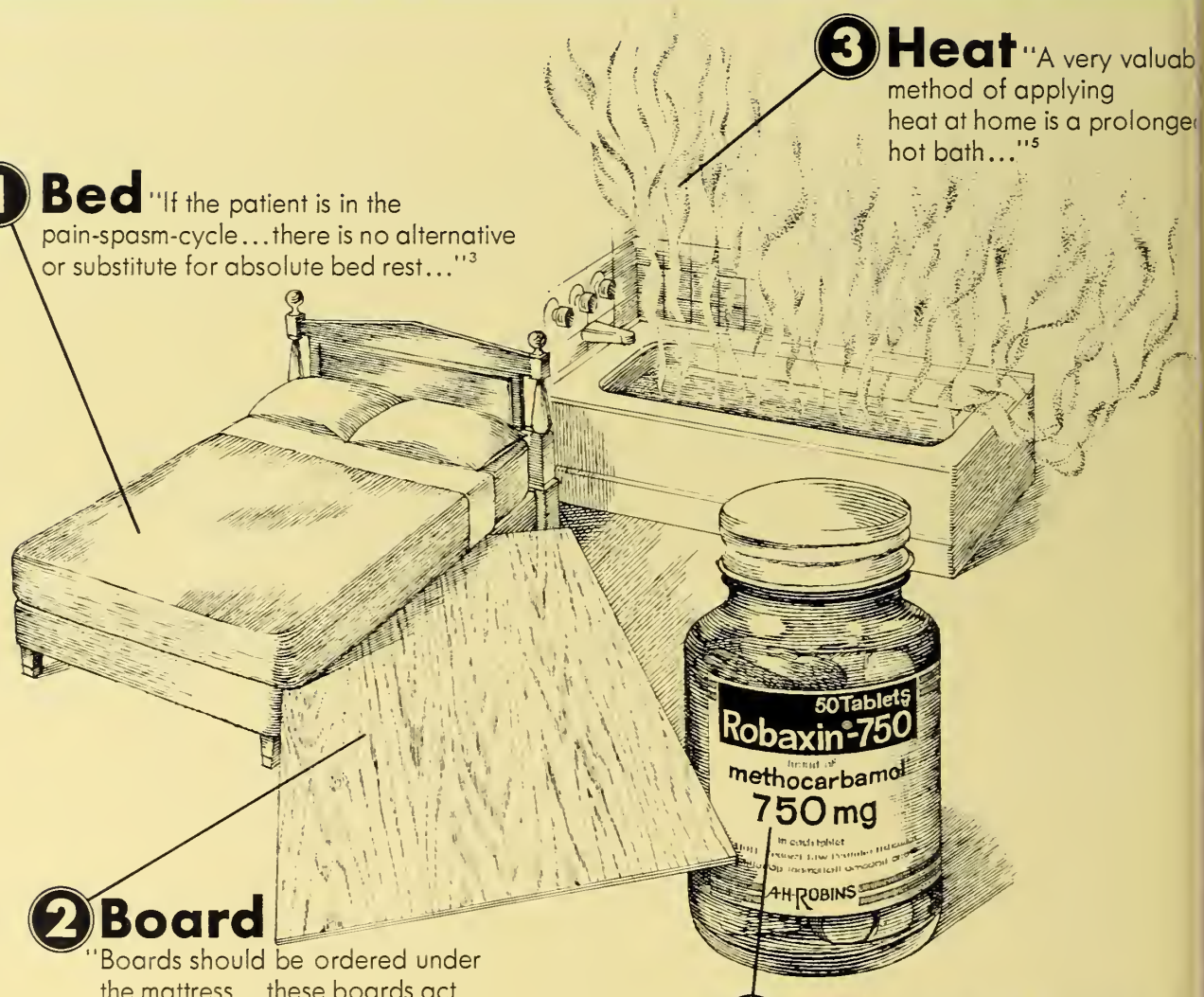
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References: (1). Godfrey, C.M.: Applied Therop. 8:950, 1966. (2). Gottscholk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dokoto J. Med. 18:26, 1965. (5). Soto-Holl, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. ond Weiss, S.: J. Am. Osteopoth. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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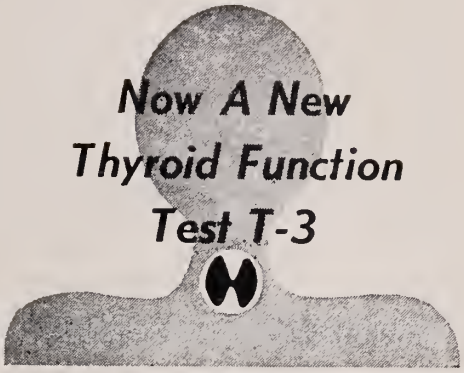
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1. Scholer, J. F.: J. Nuclear Med. 3:41, 1962. 2. Foeckler, F., et al., Paper, Meet. Soc. Nuclear Med., June 1962. 3. Sodee, B.: Paper, Meet. Soc. Nuclear Med., June 1962. 4. Nordyke, A. M., et al.: Paper, Meet. Soc. Nuclear Med., June 1962.

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Description: V-Cillin K, the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly), combines acid stability with immediate solubility and rapid absorption. Higher, more rapid serum levels are obtained than with equal oral doses of penicillin G.

Indications: Streptococcus, pneumococcus, and gonococcus infections; infections caused by sensitive strains of staphylococci; prophylaxis of streptococcus infections in patients with a history of rheumatic fever; and prevention of bacterial endocarditis after tonsillectomy and tooth extraction in patients with a history of rheumatic fever or congenital heart disease.

Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

How Supplied: Tablets V-Cillin K® (Potassium Phenoxymethyl Penicillin Tablets, U.S.P.), 125 mg. (200,000 units), 250 mg. (400,000 units), and 500 mg. (800,000 units).

V-Cillin K® (potassium phenoxymethyl penicillin, Lilly), Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567A] 800198

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The RHODE ISLAND MEDICAL JOURNAL

Vol. LI NOVEMBER, 1968 No. 11

*THE FIRST DOCTOR SAMUEL ADELSON MEMORIAL LECTURE**

PERSPECTIVES IN CANCER CONTROL

CHARLES S. CAMERON, M.D., Sc.D., *of Philadelphia, Pa.*
President, Hahnemann Medical College and and Scientific Director, American Cancer Society; Author of "The Truth About Cancer."

Given the Time and Resources Science Will Sooner or Later Prevail.

Last week in San Francisco the House of Delegates of the American Medical Association narrowly defeated a resolution which would have forbade the participation of any member in programs of community health sponsored by the federal government. The impact of this resolution was that, no matter how dire or pressing the health needs of a community, you might not take part in measures directed at their relief, if those measures were being promoted or supported by the government. I think it is well that the measure was defeated — I regret that its defeat was achieved so narrowly — because I am persuaded that the federal government is determined that the action gap between discovery and application in matters pertaining to health shall be closed so far as possible. In the circumstances of this determination we have the choice of responding and becoming effective participants (and even, in some measure, controlling the local operation) or we can become obstructors, or reluctant, derisive, or indifferent observers on the sidelines.

BIOLOGY OF CANCER

Physicians seem to have an innate disinclination to engage in social medicine, by which I mean attempts to deal with disease and disease-producing environments in aggregates of people. This may well be because they have not been trained to do so. Traditionally, in medical school, the student is exposed to patients by ones — he sees this man in this bed in this period of time with this disease. He is not taught to be concerned with the economic stresses, the family tensions, the inadequate diet, the poor housing, the rat infestation, and the polluted air to name a few environmental circumstances which may have contributed to this man's disease and to which environment he is destined to return. I am proud that Community Medicine is now a major department in our medical school, and that students can be afforded the opportunity to experience the ecological background of disease. We are at the stage in the evolution of medicine where this becomes the responsibility of practicing physicians. We have no justification for continuing in the paradoxical situation where our physicians are better trained than those anywhere in the world to treat a sick man, but are wholly incapable of dealing effectively with a sick society.

My interest in cancer control is not a thing apart from what I have just said: I propose to demonstrate that improved control of cancer is a legitimate objective, and that it is apt to be achieved only when all physicians accept it as a mission of medical practice. The gynecologist has already done so; we shall examine the reasons why he has and, hopefully, take aim from there.

There is no evidence that cancer is a recent biological phenomenon. Accounts in papyri suggest it, mummified remains have evidence of it, and the records of medieval surgery all but prove it.

Figure 1, for example is a photograph of the vertebrae of a dinosaur which is clearly the site

(Continued on next page)

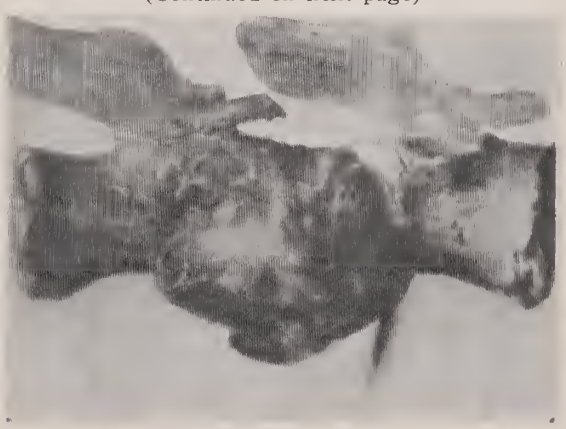


FIGURE 1.

*Read at the Newport Hospital, Newport, R.I., on June 26, 1968. Samuel Adelson, M.D. (1897-1965) of Newport, R.I. served as the President of the Rhole Island Medical Society during 1961-1962.

of a tumor, in this care a hemangioma. Nor is neoplastic growth confined to animals. Tobacco mosaic disease is a kind of neoplasm, and the sugar beet shown in Figuare 2 is evidence of atypical cellular activity called crowngall.



FIGURE 2.

Earlier observations of neoplasia were confused with swellings of many kinds — you recall that the word "tumor," which we use today almost entirely in the context of "new growth," originally signified any swelling, including the commonest kind, that associated with inflammation. The differentiation of neoplasms from swellings of other kinds could only follow the development of the refracting microscope, so that it was not until the 1820's and 30's that observers were able to describe the distinguishing characteristics of neoplasms. From that time a slow accumulation of observations gave rise to their classification according to tissue origin and morphology, which has now become reasonably standardized. James Ewing's "Neoplastic Diseases" is perhaps the catechism of tumors, and he gave it as his opinion that there were more clinical and pathological entities in the field of neoplasms than in all the rest of pathology.

SURGERY

At the time pathologists were acquiring the ability to diagnose cancer accurately, developments in bacteriology, asepsis, antisepsis, blood typing, and anesthesiology were setting the stage for a new drama—precise and reasonably safe surgery based on anatomic principles and on knowledge of the tendency of many cancers to spread by way of regional lymphatics. The gastrectomy, for instance, essentially as it is performed today, was conceived and demonstrated by Billroth well in advance of roentgenography. The careful, orderly mastectomy of Willy Meyer replaced the guillotine ablation in which the breast was held up and amputated with one fell swoop, as it were. Intestinal resections became feasible when the lesion could be localized. Somewhat later (1908) Miles devised the radical abdominoperineal removal of the rectum and lower sigmoid; elaborate and extensive removal of structures of the head and neck were proposed; and in 1933 Evarts Graham performed the first successful pneumonectomy on a human subject. As recently as 15 years ago Brunschwig undertook to revise the criteria of operability in pelvic cancer and to enlarge substantially its parameters. But deaths from cancer did not appear to be affected, and the reason appears to be that even these impressive techniques could not compete with the fact of the advanced state of most cancers to which they were applied. I think the situation is somewhat analagous to what we are experiencing in heart transplantation today. Advanced and metastic cancer, like the host's immune predilections for rejecting the alien protein, frustrate the quite adequate technology of the surgeon.

EARLY DIAGNOSIS

In 1896 Roentgen discovered x-rays, and two years later the Curies isolated radium. Within a matter of months it became known that these agents had profound effects on living tissue, and only a little later it was observed that these effects were selective, that is more pronounced upon cells undergoing mitosis. Their use in cancer, especially of the uterus, was fairly well standardized by 1910-12, but, as in the case of surgery earlier, death rates seemed relatively unaffected. It occurred to a group of gynecologists, of which Joseph C. Bloodgood was a leader, that if women could be informed of the serious nature of abnormal vaginal bleeding, and would seek diagnosis earlier, the results ought to be improved. Thus was born in 1913 the American Society for the Control of Cancer — a voluntary association of physicians and philanthropic laymen, whose first purpose was public education. Its watchword became "Early Cancer is Curable," and its concern for cancer was extended to other sites and became known as Cancer's Seven Danger Signals — abnormal bleeding, a lump, a sore that does not heal, hoarseness, cough, difficulty in swallowing, persistent indigestion, and a change in bowel habits. Admittedly, some of these are not early, but rather late manifestations of cancer, as in the case of dysphagia; but until very recently they represented as respectable a front line as could be mounted, and in some respects they still do.

The large questions which I raise in this Adelson lecture are these:

1. Is cancer control a valid objective?
2. Is early diagnosis relevant to cancer control?
3. Is early diagnosis, or better still prevention, achievable?

Let me comment here on the phenomenon that there seems to be no correlation between the standards of medical care, which we accept as having improved over the last 50 years, and the number

of cancer deaths and the overall cancer death rate. Figure 3 shows that in the first half of the twentieth century cancer has risen from the eighth to the second ranking cause of death in the United States.

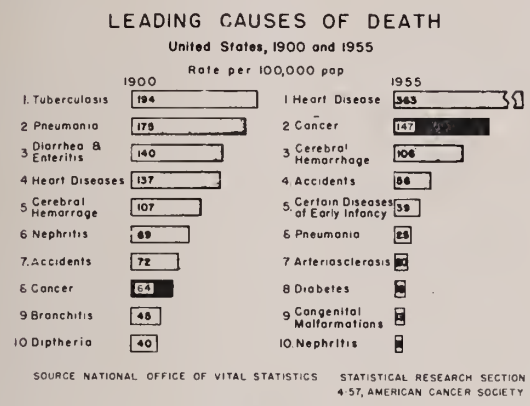


FIGURE 3.

To begin with, the population has increased — some think alarmingly. We are currently adding to the census of this country at the rate of a city of Chicago every year, and if this increment rate continues our 200 million will be 270 million in 13 years, 350 million 32 years hence, and 1 billion 100 years from now. At the same time, the population is aging, there are over 3 times as many persons over 45 in the United States as there were 50 years ago — a consequence of better living standards, improved sanitary science, the virtual elimination of epidemic infectious disease among children, the relative control of tuberculosis and lobar pneumonia, and the effectiveness of management of such degenerative diseases as diabetes and hypertension. Some of my biometrician friends hold that the reach for longer life is about at the limit, a view which I at 60 am reluctant to accept. In such reflections I am reminded of the wistful remark of Horace Walpole. "About the time I die," he wrote, "or a little later, the secret will be found how men may live forever." Not long ago a most spritely poetess, Helen Bevington, undertook a message to Walpole, I suppose in the hope of bringing him some comfort. Miss Bevington wrote:

Horace be comforted to die,
One century has meandered by and half of the next
Since it was true the temporal state eluded you.
Now as I read your pensive letter, I wish myself that times were better.
And I might boast how men contrive, as you fortold, to stay alive.
But now we should possess the key to fleshly immortality
And if we wanted to, endeavor to live forever and forever.
This to infinite regret is not a custom with us yet.
I write you, Horace, for good cheer,
Life is about as usual here.

Of course Miss Bevington was exercising her poetic license, because life is not as usual here. A baby born in Walpole's day could expect to live, on an average, 34 years. Today the life expectancy for males is 69 and that for the weaker sex is approaching 72.

CANCER INCIDENCE

The point is that the longer life span and the population explosion have very significantly increased the number of older persons among us. And since cancer is a disease primarily of those beyond 50, it is logical, and perhaps inevitable, that there should be an increase in cancer incidence and prevalence.

These remarks relating the age of a people to the risk of cancer recall the credo I mentioned earlier, that cancer is a consequence of civilization. To the extend that civilization permits people to live longer, the statement is true. The world map in Fig. 4 shows in shades of gray the death rates from cancer among the nations of the world, the darkest areas having the highest rate, the lighter portions the lowest.

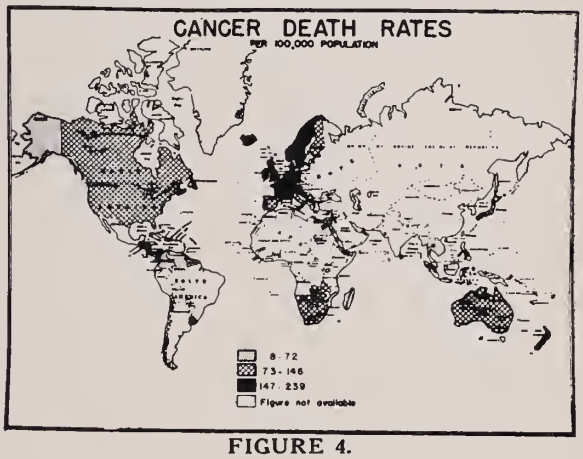


FIGURE 4.

Remember, however, that large areas of the world have no system at all for recording and reporting vital statistics. By contrast, Figure 5 is a similar map in which the density of gray is a function of longevity. There is, actually, very little contrast — high cancer countries are those with long life spans.

A similar situation appears when cancer rates are compared with standards of medical care in various parts of the United States; it appears that geographic areas well supplied with doctors and hospital beds have cancer rates definitely higher than those in areas with few doctors and limited hospital facilities in relation to the population. A

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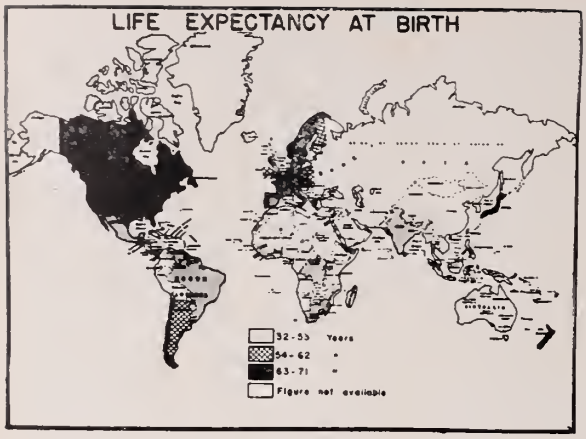


FIGURE 5.

possible conclusion is that, if you have cancer, a doctor is the last person you should see. What it really means, of course, is that in places having high standards of medical care one's chances of dying from cancer, improperly diagnosed and inaccurately recorded, are comparatively small.

What, then, is the record of these 55 years of cancer control? In the 35 years covered in the graph shown in Figure 6, the death rates for can-

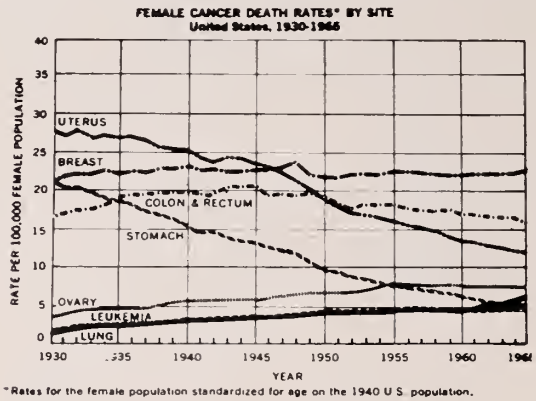


FIGURE 6.

cer among women show these changes: (1) the most striking feature is the decline in deaths of cancer of the uterus — a drop of about 50 per cent in the space of a generation. I should add that no figures that I know of indicate an appreciable decline in the *incidence* of this form of the disease. Of much interest is the consistently lowering death rate from cancer of the stomach. Rising significantly is the line for cancer of the lung, the reason for which I shall discuss, and the increase of cancer of the ovary, with no satisfactory explanation, although improved diagnosis and wider use of endocrine products come to mind. Other changes are of doubtful significance. In consideration of its frequency and the fact that it remains the leading cause of death from cancer among women, the line for breast cancer is a matter for special concern. In spite of all the propaganda aimed at the significance of a lump in the breast and in the face of percision surgery, improved modalities of radiation therapy, tumor inhibiting hormones, chemotherapy, and steroid ablation procedures, the death rate for breast cancer has not changed appreciably in these 35 years.

For men (Figure 7), the extraordinary rise in cancer of the lung is the chief feature — from about three per hundred thousand in 1930, to thirty-nine per hundred in 1965. It is probable that bronchogenic carcinoma will affect 50,000 persons this year, probably the greatest percentage increase of a non-infectious disease in recorded history. Again, the decline in deaths for cancer of the stomach is seen. Increases of significance are noted for cancer of the pancreas and prostate which are of an order that could be accounted for by better diagnosis. Leukemia shows an increase in both sexes of somewhat more than borderline significance.

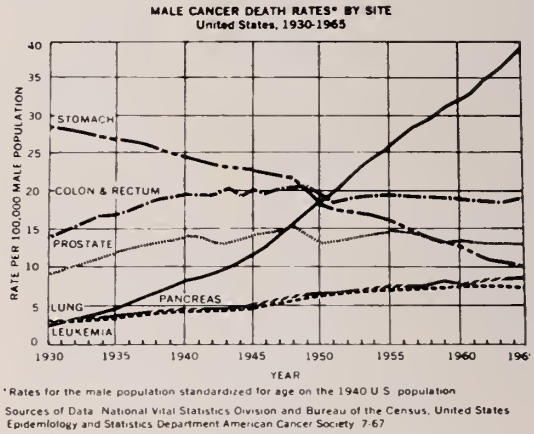


FIGURE 7.

Let me now analyse in some detail the circumstances pertaining to these three kinds of cancer, which together account for about 89,000 cancer deaths each year. I select these sites, because I am persuaded that most of the deaths from cancer originating in them are preventable.

CANCER CYTOLOGY

In 1928 George Papanicolaou presented at the Race Betterment Conference in Battle Creek a summary of his observations of the morphology of cells found floating in human vaginal secretions, and later that year his modest paper appeared in the journal GROWTH. It was titled "New Cancer Diagnosis," and in it he said of the examination now called the Pap test, "A better understanding and more accurate analysis of the cancer problem is bound to result from the use of this method. It is possible that analagous methods will be developed for the recognition of cancer in other organs. I feel that such methods can and will be developed

in the future." (Incidentally, he fulfilled his own prediction. The method came in time to be applied to the colon, kidney, bladder, breast, prostate, lung, stomach, sinuses, and even to the brain; and in most instances he led the way.)

But his little paper made no more impression than did Alexander Flemming's account of the effect of penicillium notatum on cultures of streptococci, which appeared in the British Journal of Experimental Sciences about 7 years later.

Of these years of non-recognition, Doctor Pap said: "I failed to create much faith among my colleagues of the practicability of this procedure." But in time Herbert Traub arrived at Cornell. A gynecologist of distinction, he perceived the potential in Papanicolaou's discovery, and in consequence of their collaboration there appeared in 1943 the monograph titled "The Diagnosis of Uterine Cancer by the Vaginal Smear." Three years later the American Cancer Society undertook an intensive campaign to gain public and professional acceptance of the merits of the test, which is now generally recognized as a reliable, practical means of population screening. Figure 8 shows a vaginal Pap smear containing both normal and cancer cells. From this ample experience has come an understanding of the significance of cancer in situ — specifically that in situ cancer is a precursor of invasive epidermoid cancer of the cervix and that at this stage in its evolution the curability of cervical cancer approaches 100 per cent. Figure 9 shows an in situ cancer of the cervix. I need not remind this audience of the frequent experience of gynecologists — that cancer of the uterine cervix, invasive or in situ, can usually be discovered by the Pap test when it is so small as to escape the examiner's eye. The experience of 26 years is shown in Figure 10 with the incidence of in situ cases and that of invasive cases crossing.

We have then the means, or at least the technical means, of virtually eliminating deaths from cancer of the uterine cervix through the universal application of the Pap test. There are three obstacles to universal application: (1) indifference of most women to its importance; (2) lingering skepticism among doctors which is related to the low yield in case finding — in the order of one positive in 800 or a 1000 cases; and (3) the logistics of microscopic examination of the material. Public and professional attitudes will gradually accommodate to the mounting evidence, I predict. And the solution to the logistical problem can only lie in an adequate force of cytotechnology screeners or in the development of electronic or chemical techniques for mechanically evaluating smear preparations. Meanwhile, facilities are at hand for processing the number of tests apt to be performed in the next few years, and I suggest that it is our

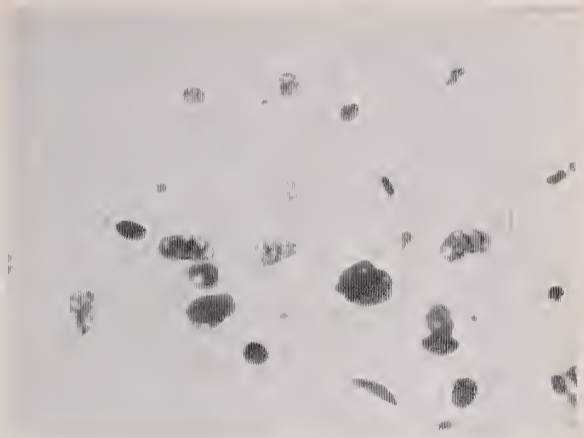


FIGURE 8.



FIGURE 9.

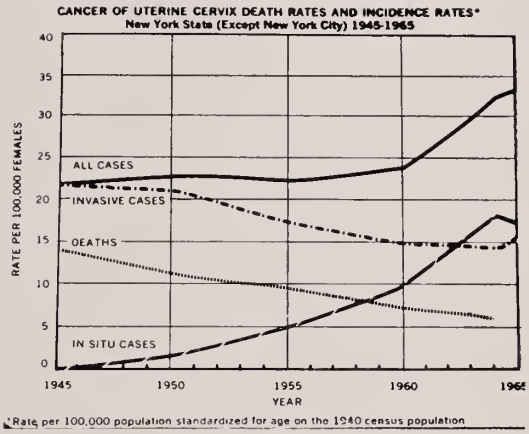


FIGURE 10.

mission actively to promote, to evangelize, if you will, this life-saving procedure which is a proven safeguard against deaths from cancer of the uterus.

I have not meant to give the impression that all of the uterine cancer death rate is attributable to the Pap test *per se*, although it may be the most important factor. The others are the impact of public cancer education, more and better-trained

(Continued on next page)

gynecologists, and improved techniques or surgical and radiation management.

CANCER OF THE LUNG AND TOBACCO

By contrast with what has been said in respect of cancer of the uterus, it does not appear likely that effective control of lung cancer will be developed soon. Our earlier hope that routine x-ray examination of the lungs of presumably well persons would uncover asymptomatic cancer in the curable stage has not been realized. Although still under investigation, routine lung sputum examination seems at the moment to be frustrated by the tendency of the cellular material to disintegrate early. And yet lung cancer can be controlled. In fact, next to the uterus it may well be the most controllable of all cancers. It can be controlled because most of it can be prevented. It can be prevented because we know its chief cause, and it is something we don't have to live with.

Let me very briefly and incompletely review the evidence of the causal relationship between cigarette smoking and lung cancer. Over 20 large-scale studies of smoking habits of persons suffering from lung cancer have appeared in the last 25 years, and they have been remarkably consistent in demonstrating that the lung cancer group were more avid smokers of cigarettes than their cohort group — usually hospital patients not suffering from lung cancer. These studies are known as retrospective by statisticians because they start with a disease diagnosis and work back to try to identify circumstances which might have been causal. In 1951 we in the American Cancer Society devised the first comprehensive *prospective* study of smoking and its sequels; and it consisted essentially of recording the smoking history of 152,000 men between the ages of 50 and 69 in about about 25 widely scattered communities. As deaths occurred in the study group, the certified cause of death was recorded; and if death was due to cancer the report of the pathologist was also sought and recorded. Eighteen months after the smoking questionaires were completed, enough deaths had occurred to permit an initial analysis. Figure 11, which shows these data, has some historical significance because it was the first summary of what has now become a vast pool of data — including investigations by other agencies.

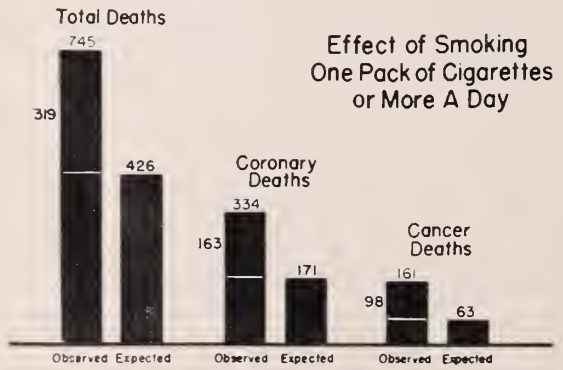


FIGURE 11.

From the total group under study those whose histories indicated previous or continuing use of one pack of cigarettes or more per day were selected for analysis. Life tables indicated that among this many men of this age during the period of observation, 426 deaths would be expected. In this "pack or more a day" group, there were in fact 745 deaths from all causes. In the same group, 171 of the deaths would be attributable normally to coronary occlusion, according to the tables. Among the heavy smoking group, there were 334 — nearly twice the expected number. Again, the life tables predicted 63 deaths from cancer among the men in the study. There were actually 161 — two and a half times what had been anticipated.

Later, as the data accumulated (Figure 12) it became possible to compare death rates of lung cancer among different kinds of smokers. Among those who denied ever having smoked, the rate was about 3.4 per 100,000. It was somewhat higher among the men who smoked cigars, or who smoked only occasionally (11.4 and 11.9). It rose to 28.9 per 100,000 among pipe smokers and soared to 78.6 per 100,000 among those who smoked or had smoked only cigarettes, and that is 23 times higher than the rate for non-smokers.

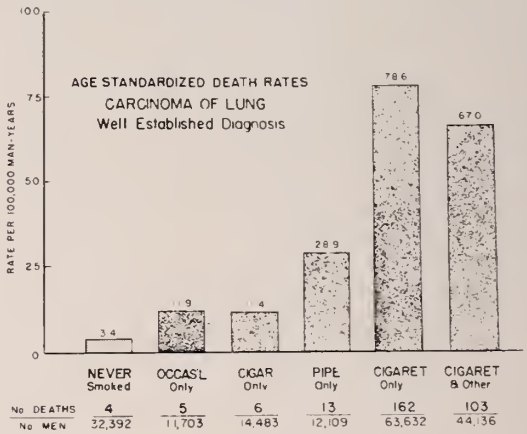


FIGURE 12.

LUNG CANCER RESEARCH

Data from the National Office of Vital Statistics (Figure 13) showed higher lung cancer rates for city dwellers than for those in rural areas, and this has been used repeatedly to support the view that air pollution is an important factor or even the chief culprit in the causation of lung cancer. The Cancer Society material, on the contrary, demonstrates that if one smokes cigarettes, it hardly matters where he lives — his risk is of the same order.

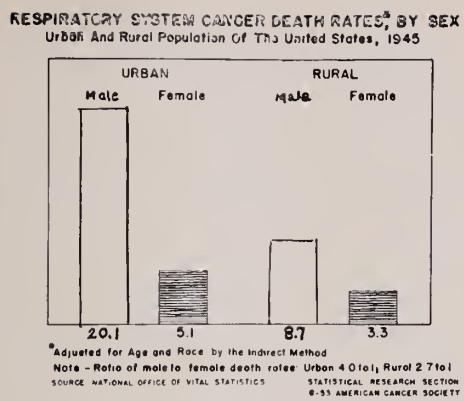


FIGURE 13.

It is true that some effect of the urban environment, probably polluted air, is seen among those who live in cities of over 50,000 population and who never smoked. But the fact of smoking cigarettes or not smoking them is overriding. The air of crowded and especially industrialized cities does indeed contain carcinogenic contaminants. Doctor Irene Koprawska of our Department of Pathology has painted the mouse cervix (Figure 14) with a solution containing samples of center Philadelphia air supplied by the Department of Health, and has thereby produced frank infiltrating epidermoid cancer. She has utilized the same method for studying cigarette smoke condensate with the same results — perhaps the first time that tobacco induced cancer has been experimentally established in a



FIGURE 14.

mucous tissue. The classical demonstration of the cancer causing property of tobacco was by Wynder and Graham 15 years ago. They painted the condensed smoke of cigarettes suspended in acetone on the shaved backs of mice: at eight months (Figure 15) the first papillomas appeared, and by the 18th month 60 per cent of the animals had papillomas. The first cancers appeared in the 12th month, and by the 22nd month over 40 per cent of the subjects had infiltrating lesions.

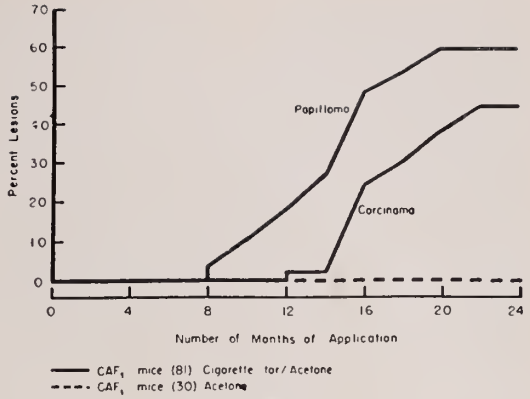


FIGURE 15.

So much for the evidence adduced by epidemiology and by chemical carcinogenesis. In the field of pathology the 15 years of painstaking work by Oscar Auerbach of the Veterans Administration Hospital at East Orange, New Jersey, have added impressively to the indictment of the cigarette. At autopsy Auerbach has routinely examined all portions of the bronchial tree, identifying each mucosal strip by coded numbers. The histopathology of each strip is recorded, with no foreknowledge on the part of the examiner of the smoking history of the deceased. The smoking history on each subject is known only to members of the Statistical Department of American Cancer Society. The pathology and the smoking history are then compared. The incidence of tissue changes has from the beginning been decidedly higher in the cigarette smoking group than in the non-smokers, and these changes vary in extent and degree of abnormality directly with the duration and amount of smoking. The bronchial epithelium is characterized by stratification, basal cell hyperplasia, squamous metaplasia (Figure 16), and cancer in situ all in degrees rarely seen in non-smokers.

(Continued on next page)



FIGURE 16.

These three kinds of data serve to illustrate only a part of the great thrust of observations which indict the cigarette as a major cause of lung cancer. Not all lung cancer is caused by cigarette smoking — the adenocarcinomas for example. It would be unreasonable to suppose that the lung is any more immune to cancers unrelated to the environment than any other organ. It is my estimate, however, that of the 50,000 lung cancers now developing in the United States yearly, not more than 5,000 are unassociated with smoking. If these estimates have any validity, 45,000 lung cancers each year are preventable. How an addicted adult quits tobacco is the subject of another lecture. The results of hypnotism group therapy, colchicine related drugs, and sour balls are far from gratifying, and the relapse rate is discouraging. Our hope, I believe, lies in persuading the uncommitted not to smoke. This is not at the high school level — it is in grades 5 to 7.

Every one of us has a stake in this crusade to end the epidemic of cancer of the lung. Whether it is by example to our children and parents, or by public speaking, or by participating in health education programs in schools — doctors are the most respected, persuasive, and effective authority that exists.

CANCER OF THE BREAST

I pointed out earlier that there has been no appreciable change in the death rate from cancer of the breast in the last 35 years, and this is in the light of the heroic efforts of the American Cancer Society and the National Cancer Institute in bringing the importance of finding the lump in the breast at the earliest possible time (as in the breast self-examination program) to the attention of all women; and it is in spite of the new radical surgery and the array of modalities of irradiation. This frustrating resistance of breast cancer has created a kind of avant garde among some doctors — a group of sophisticated logicians whose creed is "biological determinism." They hold that, in the case of cancer of the breast generally and for many other kinds of tumor sometimes, the element of time is quite unimportant, being a poor second to the innate growth characteristics of the tumor. If a given breast tumor has as a characteristic early metastasis, then it will have metastasized from the outset and certainly before the primary tumor can be detected, so that the earliest such a neoplasm could be treated would be too late. At the other extreme are the slow-growing scirrhous lesions which develop indolently and rarely metastasize — these can be safely neglected for months or years and still be curable. So, according to the precept of bioloogical determinism, our efforts to cope with breast cancer are feeble compared to the intrinsic biologic properties of a given tumor, which in the end determine the outcome. One can then be leisurely in diagnosing and treating breast cancer because you are either too late or next month will be time enough. This may be something of an oversimplification of this school of thought, but, if it is, I will argue that the determinists have a too simplistic view of the problem.

About 20 years ago Fred Stewart, the long-time pathologist to the Memorial Hospital in New York, undertook a meticulous measurement of the diameter of every breast cancer he examined, and he correlated these measurements with survivorship. When the tumors were less than 2 cm. in diameter, 73 per cent of patients were alive and well at the end of the five year mark. With each increment of 1 cm. to the diameter, the percentage of survivals fell until at 5.5 it rose. The latter paradox was explained as due to a large number of bulky medullary lesions which behaved rather benignly. Tumors, including, I believe, breast cancers, are not black or white, but extend through a broad spectrum of grays, some metastasing very early, possibly ab initio, some never, and most of them in between. Which is to say that at some point in time in the growth of most malignant tumors, metastasis will occur. The problem then becomes one of forestalling this fatal event by finding, diagnosing, and removing the primary lesion at the earliest possible time.

MAMOGRAPHY

Until very recently, we have relied upon feeling the lump in the breast. I am suggesting that this is a very crude method. By the time a breast cancer is big enough to be felt, through layers of skin and fat, it can no longer be considered early in the bioloogical time scale. The fact is that the average woman with breast cancer presents herself for examination when the tumor is the size of a ping-pong ball.

In an effort to uncover breast lesions too small to be felt, refinements of roentgen techniques were begun about 10 years ago, although Salomon employed x-rays in examining the breasts 50 years ago. Mammography has now been developed to the point where it can be conservatively said to be at the least extremely valuable adjunct in the detection and differential diagnosis of tumors of the breast, and it probably merits wide-spread use as a screening procedure. It is more accurate in the post-menopausal state when functioning glandular tissue is replaced by fat. It is safe enough to be employed yearly, operating at voltages of 25 to 30 thousand. It has often disclosed masses with indefinite margins or small areas of spicule calcification, which are the pathognomonic features,

when they are not yet palpable. In fact, mammography can disclose lesions as small as 5mm., and I remind you that the most experienced examiner is unlikely to palpate a tumor smaller than I cm. in diameter, particularly in a multi-nodular breast.

Gershon-Cohen at the Albert Einstein Medical Center of Philadelphia has recently completed a ten-year mammographic survey of 1,120 healthy volunteers, over 35 years of age and without symptoms of breast disease. They reported for breast x-ray examination at 6-month intervals. Thirty-six cancers were found in 33 women (bilateral lesions occurred in three). The average diameter of the lesions was 1.1 cm., and 70 per cent were classified as Stage I — that is, confined to the breast. Not all breast cancers will be found by the radiologist alone, but this is also true of surgeons. There is the prospect that radiologists could alert surgeons to lesions in about 20 per cent of patients who exhibit no symptoms or signs. On the other hand, surgeons will discover lesions in about 6 per cent of cases that will not be demonstrated on x-ray examination. When these specialists work as a team, diagnostic accuracy approaches 90 per cent.

THERMOGRAPHY

All of us spontaneously and continuously broadcast health signals through fluctuations in our skin temperature. Fever as registered by the clinical thermometer has long been known to signify illness, but localized skin temperature elevations have received little attention. These heat radiations are confined to the infra-red portion of the electromagnetic spectrum and thus can be visualized only with sophisticated heat-sensing apparatus. Such devices, of astonishing sensitivity, were developed during World War II; they can record the heat from a match flame at a distance of 20 miles. In clinical thermography, any part or all of the body may be scanned by the heat-sensing machine. The infra-red rays are then converted into equivalents of intensity in the visible light range which are then directed onto an ordinary Polaroid® film. Each resulting thermogram contains around 60,000 bits of temperature information which are shown photographically in a mosaic of grays. Lighter tones indicate hot spots, and the darker tones mark the cool areas. The thermogram shown in Figure 17 that of a man smoking a pipe. The lightest area in the scan is the pipe bowl, obviously very warm. The nose and the rim of his ear are relatively cool, and so is the hand — precisely the parts which give us trouble in very cold weather. In thermography of the breast, the patient lies on a table with the chest exposed and arms extended upward in an ambient temperature of 70 degrees.

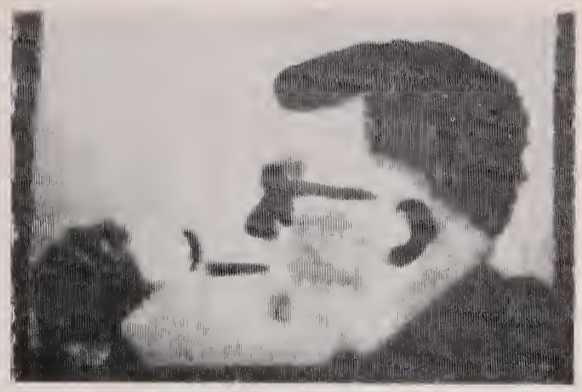


FIGURE 17.

Suspended above her is a silver surfaced mirror at a 45° angle. Her infra-red emission is thus reflected horizontally into the sensor which may be 10 feet away. The total scanning time is about 12 minutes. Temperature elevations of 1°C. or more are regarded as significant, and the measurement is made by comparing the shades of gray in the thermogram with a simple color comparator scale. While the breasts light up, so to speak, in such non-neoplastic states as pregnancy, inflammation, and some dysplasias, hot spots, more or less circumscribed, suggest cancer. Brueske and Gershon-Cohen thermographed the breasts of more than 4,000 patients; analysis of 200 consecutive breast cancers revealed the presence of a localized "hot spot" over the lesion in 94 per cent. This high rate of true positive findings puts the method in the class of the Pap test. The feasibility of using theremography for mass screening is currently being studied. It is perhaps more discriminating than mammography and considerably cheaper than x-ray examination.

MASS SCREENING

It has been demonstrated that the present percentage of Stage I lesions in the breast cancer population can be more than double through the mass application of mammography. I am reasonably certain that the addition of thermography to a mass screening program of this sort would further increase the percentage of Stage I lesions — I suggest 80-85 per cent as an achievable objective. Extrapolating from there, I would expect that the number of deaths from breast cancer might be reduced by two-thirds to three-fourths. And for the first time that frustrating line indicating no change over the years will dip.

These three varieties of cancer which I have been emphasizing might be called Captains of the Legions of Cancer, to borrow and modify a phrase which Osler once applied to lobar pneumonia. If one adds to their potential for control, several others in which early detection correlates with in-

(Continued on next page)

creased curability, the salvage of patients with cancer could conceivably increase by over 100,000 per year. I refer to cancer of the larynx with a cure rate of 80 to 85 per cent if treated while the lesion is limited to one vocal cord, to cancer of the rectum and recto-sigmoid with 70 to 75 per cent curability when resected before it has extended beyond the mucosa, and to cancer of the lip, gum, and buccal surface with 65 per cent cured following adequate treatment of small lesions. These last three varieties are all discoverable when they are small, although not with the same facility. I frankly despair of persuading significant numbers of people to submit to the inconvenience and discomfort of routine yearly proctosigmoidoscopy, although it is clearly capable of disclosing small curable tumors, including polys, which may be present in as high as 10 per cent of the adult population. On the other hand, tumors of the vocal cords manifest themselves by hoarseness when they are minute; only the most insensitive individual can remain unaware of any intrusion into the accustomed comfort of the mouth, and even the insensitive can look.

I know of no situation in the entire roster of disease where we are falling so far short of saving lives using methods already at hand, as exists in the area of neoplasms. This presents a call to action, and I venture the hope that some of you share my optimism,, which I admit may be somewhat Messianic, that substantial headway is possible in achieving the measure of control of cancer which now seems possible.

I should like to conclude my observations with references to two important aspects of cancer research — and I choose them because at the moment they hold such bright promise of eventual control of cancer, at least to a degree not now possible.

CHEMOTHERAPY

The first is cancer chemotherapy. In 1944, it was discovered quite by accident that nitrogen mustard had a preferential destructive effect on the lymphatic apparatus, and it appeared logical to administer this agent to patients suffering from proliferative diseases of this system — Hodgkin's Disease, lymphosarcoma, and the leukemias. In certain of these affects the effect was immediate and gratifying. I had my first experience with this earliest of cancer chemotherapeutic compounds in 1945. The case was that of a young sailor who suffered from extensive pulmonary metastases (Figure 18) which had originated in an embryonal carcinoma of the testis. He was selected for HN_2 treatment because of the rich component of lymphoid stroma in the tumor. Although he was in critical condition on arrival at the Brooklyn



FIGURE 18.



FIGURE 19.

Naval Hospital, he quickly responded to the treatment (Figure 19), and a few weeks later was able to enjoy liberty days in New York. But the effect was transistory, and his tumors renewed their rapid growth. Again, he responded to treatment, and again he relapsed. The periods of partial remission became shorter and eventually we lost him. Evidently treatment could not be pressed to the destruction of every remaining malignant cell because of the suppression of the hematopoietic tissues by the mustard compound, and this remains one of the chief limitations of cancer chemotherapy (Tables 1 and 2).

Hormone therapy is regarded by some authorities as a form of cancer chemotherapy, and as early as the mid-thirties Charles Huggins had established the merit of castration in the management of cancer of the prostate. Soon thereafter estrogens were administered. This recognition of the role of steroid hormones in the treatment of cancer is arising in certain tissues affected by them (target organs) led to the use of the essential male hormone, testosterone. In treating metastatic or recurrent cancer of the breast the classical hoped-for response is illustrated in Figure 20: the body of the lumbar vertebra disintegrating from osteolytic infiltration by cancer primary in the breast is restored to sound bone structure following the administration of testosterone.

Adrenalectomy and hypophysectomy are heroic last resorts which may be followed by dramatic but usually brief response.



FIGURE 20.

SEARCH FOR NEW DRUGS

Although some 22 compounds have evolved in the course of an intensive search and synthesis program of over 20 years, with one exception, conceivably two, they are not curative and are unpredictable in their inhibition of any given tumor and when they have such effect it is of uncertain duration. Administration may be by the systemic or regional route depending upon circumstances. These agents may elicit therapeutic response in about 19 neoplastic conditions. The notable exception in this generally disappointing experience is chorionepithelioma, a rare tumor arising in the placenta, manifested during or shortly after pregnancy. It usually metastasizes early and wildly, and until recently its prognosis has been extremely grave. Methotrexate, developed some 12 years ago and originally regarded as being useful largely in inducing remissions in leukemia, was shown 8 years ago to be remarkably effective in reversing the course of chorionepithelioma. The results to date indicate that 80 per cent of patients with this tumor will show tumor regression responses to methotrexate and that 70 per cent of such responses will be complete and apparently permanent.

In acute leukemia initial responses to several anti-leukemia agents are now equally dramatic, although there remains some uncertainty as to their permanence. Zubrod of the National Cancer Institute has reported very recently that in the three-year period 1964-67 the percentage of patients achieving remission — apparently complete — rose from 50 per cent to 90 per cent. There has been a corresponding extention of survivorship. In 1964 the median survival ranged from 12 to 19 months from the beginning of treatment, in contrast to periods averaging 6-8 months, which obtained for many years. Although it is not possible to report a comparable median survival time for patients starting treatment in 1967-68, he stated that more than half the children who started treatment in 1967 are still alive, and he predicted that "it is quite possible that median survival in patients now starting treatment will be between 4 and 5 years." According to Burchenal, some long-term survivors of acute leukemia are reported alive and well after 17 years following treatment. In fact, he stated in the April 1968 issue of the The Journal of Cancer that 103 of 157 long-term acute leukemia survivors were alive and well and without evidence of disease from 5 to 17 years after diagnosis. He predicted that, of the original group of 157 patients, those who have lived beyond the five-year mark may be expected to show a survival rate of 50 per cent for at least 15 years. These accomplishments are in vivid contrast to acute leukemia as I encountered it 30 years ago, and it may well be that the containment of this disease is entering its final phase. Zubrod attributes this dramatic increase in survivorship to 3 major developments: (1) Discovery of new drugs; (2) Better utilization of drugs which came into use earlier; and (3) Development of more sophisticated, more individuallly specific and often sequentially adopted regimes of drug therapy, moving from one compound to another as resistance appears.

If the chemotherapy of cancer has not yet affected the death rates, the prospect of its doing so is considerably brighter than it has ever been since those days 22 years ago when nitrogen mustard first raised our hopes.

GENETICS

Finally, I shall offer it as my belief that the basic scientists in the complex field of what Ithink of as the chemistry of genetics have their hand on the very heart of the problem of abnormal growth, and I remind you that the chemical structure of

(Continued on next page)

TABLE 1

NEOPLASTIC DISEASES RESPONDING TO CHEMOTHERAPY

Diagnoses	Polyfuctional Alkylating Agents	Antimetab-olites	Radioactive Isotopes	Steroid Hormones	Miscellaneous Drugs	Results
LEUKEMIA Acute. Children usually lympho-blastic	Cyclophos-phamide	6-MP, 6-TG Metho-trexate Ara-C		Adrenal Cortical Hormones	Vincristine	80% bone marrow remis-sions; 60% live beyond one year.
Acute. Adults usually myelo-blastic		6-MP, 6-TG Metho-trexate Ara-C		Adrenal Cortical Hormones	Vincristine	15-25% improved for several months or longer.
Chronic myelocytic	Busulfan	6-MP, 6-TG	32P			Patients maintained in good condition during major por-tion of disease; life occa-sionally prolonged.
Chronic lymphocytic	Chlorambucil Thio-TEPA		32P	Adrenal Cortical Hormones		Patients maintained in good condition during major por-tion of disease; life occa-tionally prolonged.
HODGKIN'S DISEASE	Chlorambucil HN_2 Thio-TEPA			Adrenal Cortical Hormones	Vinblastine Vincristine Procarbazine	Frequent favorable response; but no definite prolongation of life.
LYMPHO-SARCOMA	Chlorambucil Cyclophos-phamide Thio-TEPA			Adrenal Cortical Hormones	Vincristine	Occasional favorable re-sponse; life occasionally pro-longed.
MULTIPLE MYELOMA	Melphalan Cyclophos-phamide		32P	Adrenal Cortical Hormones		Symptomatic relief in about 50% of cases, and objective improvement in about 35%.
POLYCY-THEMIA VERA	Busulfan Chlorambucil		32P			Prolonged clinical responses.
Carcinoma of Lung	HN_2 Cyclophos-phamide					Brief improvement in about 30% of cases.
Carcinoma of Ovary	Thio-TEPA Chlorambucil Cyclophos-phamide	5-FU				30% to 50% of cases im-proved for one to three months, sometimes longer.
Carcinoma of Thyroid		131 I				Marked improvement in properly selected cases.
Carcinoma of Breast	Thio-TEPA Chlorambucil Cyclophos-phamide	5-FU		Estrogens Androgens Adrenal Cortical Hormones		25% to 50% improved by hormone.
Carcinoma of Endometrium				Progestins		25% respond; chiefly pulmo-nary metastases.
Carcinoma of Prostate				Estrogens		80% of cases respond to hor-monal therapy; definite pro-longation of life.
Wilm's Tumor, Children	HN_2 Cyclophos-phamide				Actinomycin D Vincristine	Temporary regression; 50% pulmonary metastases re-spond with long survivors.
Neuroblas-toma	Cyclophos-phamide				Vincristine	About 50% temporary im-provement with occasional prolongation of life.
Trophoblastic Tumors, Female		Metho-trexate 6-MP			Actinomycin D Vinblastine	80% respond of whom 70% show "permanent" regres-sion.

Carcinoma of Colon		5-FU			15% respond for several months or longer.
Carcinoma of Adrenal				o.p. DDD	Tumor regression and decrease in hyperadrenocorticism in selected cases.
Carcinoma of Testis	Chlorambucil*	Methotrexate*		Actinomycin D* Vincristine	35% of cases show a favorable and sometimes prolonged response.
Carcinoid	Cyclophosphamide			Actinomycin D	Symptomatic relief; occasional tumor regression.
Miscellaneous Carcinomas and Sarcomas	HN_2 Thio-TEPA Chlorambucil* Cyclophosphamide	5-FU Methotrexate*	Adrenal Cortical Hormones		In rare instances and in specific situations favorable responses occur.

*Given in Combination

TABLE 2
REGIONAL CANCER CHEMOTHERAPY CLASSIFICATION

Diagnoses	Polyfuctional Alkylating Agents	Antimetabolites	Radioactive Isotopes	Steroid Hormones	Miscellaneous Drugs	Results
Pleural Pericardial and Abdominal Effusions (instillation into appropriate cavity)	HN_2 Thio-TEPA		^{198}Au $Cr^{32}PO_4$		Quinacrine	About 50% of patients respond.
Carcinoma in Facial Areas (intra-arterial infusion)		Methotrexate 5-FU				Favorable response of tumors supplied by external carotid artery in selected cases.
Tumors of the Extremities (extracorporeal perfusion)	HN_2					Response in selected cases.
Leukemic Involvement Central Nervous System (intrathecal injection)		Methotrexate				About 80% of children with CNS involvement respond temporarily.

desoxyribose nucleic acid has been described by John Watson and Francis Krick working in the Cavendish laboratory at Cambridge. DNA consists of an enormously long double chain of purine and pyrimidine molecules strung along twisting parallel sugar-phosphate axes — adenine and guanine in the purine group, and cystosine and thymine as the pyrimidine. The account of this heroic breakthrough is contained in the just-published book by Watson titled "The Double Helix." DNA has the unique property of dividing or replication, and this would appear to be the molecular and ultimate basis for genetic coding and cellular reproduction. The implication that cancer results from an error in the sequential formation of a DNA molecule is strong. If the precise character of that error can be determined, as I suspect it will be, then truly effective inhibitors of the replication process should not be far behind.

GOALS

I have attempted a revaluation of the validity of the concept of cancer control, first in terms of what we know today about it prevention, its diagnosis and, its treatment and then in the frame of two hopeful areas of research, one clinical and one fundamental. In consideration of the breadth of the subject and of the limitation of time, I entreat your understanding and indulgence for having omitted much that deserves to be said. I am immensely grateful for this opportunity to reaffirm my faith in cancer control as a legitimate means of saving the lives of half of those stricken by this disease today, and my conviction that, given the time and the resources, science will sooner or later prevail over all of it. We shall not achieve these goals while only a few are concerned, but they can be realized when enough laymen, physicians, and scientists are motivated, mobilized, and committed.

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A REPORT OF FIVE YEAR SURVIVAL RATE: TEN MALIGNANT TUMORS — — 1956-1960*

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Results of Treatment Compare Favorably With Those Reported From Ten Other Registries.

INTRODUCTION

The Tumor Registry of Rhode Island Hospital completed ten years of operation in 1965. This event indicated an accumulation of fairly large numbers of a variety of tumor types in the Registry. It was possible, therefore, to record the five-year survival rate for the period 1956 through 1960. It is the primary purpose of this report to indicate the relative degree of therapeutic success observed among a group of our patients as compared with that reported in other studies. Ten neoplasms were chosen because of their frequent occurrence and the reasonably well-established modalities employed in their treatment. Clinical staging was considered in only one tumor studied because of lack of automation in the registry prior to 1960, and the resulting greater individual record survey that would have been required.

It is hoped that this report will stimulate increased interest in the Tumor Registry and provide the basis for more intensive study of specific tumors and the results of their treatment.

MATERIALS AND METHODS

The most frequently encountered malignant neoplasms in Rhode Island Hospital (RIH) are the subject of this report are listed in Table 1.

The 5-year survival rate from 1956 through 1960 was studied. Initial treatment coincided temporally almost exactly with the date of establishment of the diagnosis, and 5-year survival was reckoned from date of first treatment. Recurrence of the tumor was not considered in this study, and survival, with or without active disease, was recorded. Almost all patients who received surgery were subjected to the procedure most likely to produce cure or prolonged remission. Therefore, no distinction was made between "radical" surgery and "simple" procedures, and removal of the primary neoplasm qualified the procedure as initial surgical treatment. Biopsy was not considered as treatment. Staging of tumors is not recorded for all tumors studied, however, when surgery alone was used. The tumor was either in stage 1 or was associated with wholly operable regional involvement. Similarly, combined surgery-radiotherapy or radiotherapy alone indicated marginal operability in most tumors studied. In all instances concomitant or adjunctive chemotherapy (including hormones), unless used as primary treatment, did not exclude a patient who received surgery or radiotherapy, or both. All tumors receiving original treatment at RIH were confirmed by histologic examination. Although grading and specific types of tumors were often available, these were not included in the present study. Data for radiotherapy are inadequate because patients treated as "outpatients" were not reported to the registry.

TABLE 1
COMPOSITION OF STUDY

	All Patients	Primary Therapy at R.I.H.
	No.	
Carcinoma of breast	691	530
Carcinoma og cervix	337	287
Carcinoma of colon	424	385
Carcinoma of rectosigmoid	80	75
Carcinoma of rectum	184	168
Carcinoma of cecum	71	69
Bronchogenic carcinoma	328	292
Carcinoma of larynx	67	61
Carcinoma of tongue	43	38
Carcinoma of floor of mouth	36	35

*Rhode Island Hospital Tumor Registry and the Department of Cancer Research.

Survival was computed directly, and unaltered arithmetic data (observed rate) are presented. The relative survival rate described by Cutler et al,[1] (the ratio of the survival rate of the cancer population to the survival rate of the general population) was not used. That method, however, adjusts for age and "normal" attrition and eliminates the effect of disease processes other than cancer as the cause of death. The limitations of the RIH tumor registry prior to the introduction of the IBM card in 1962 made recording of staging impractical for some tumors. It is anticipated that automation of the registry will permit more nearly complete evaluations in future reports.

CARCINOMA OF THE BREAST

691 patients with carcinoma of the breast were observed at Rhode Island Hospital from 1956 through 1960. Of this number, 530 received their original treatment at RIH, while 158 were initially treated at another hospital. All patients except 2 were females (Table 2). The overall 5-year sur-

TABLE 2
CARCINOMA OF BREAST

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	159	60	99	1	98
1957	128	30	98	1	97
1958	140	29	110*	0	110
1959	134	22	112	0	112
1960	130	17	111*	0	111
Total	691	158	530	2	528

*1958 — 1 patient lost to follow up
*1960 — 2 patients lost to follow-up

vival among all patients considered (530) was 55 per cent (Table 3). Of 414 patients treated initially by surgery, 257 (62 per cent) survived 5 years. 69 patients received combined surgery and radiation (cobalt) therapy, and 30 (43 per cent) experienced 5-year survivorship. It is of interest to note that of 12 patients treated with radiation alone there were no 5-year survivors. The small number in this category is interesting, and, when the 5-year survival of 17 per cent in the chemotherapy (including hormones) group is considered, the accuracy of the radiation data is questionable. Patients referred to the Department of Radiotherapy were usually not admitted to the hospital and therefore do not appear in the Tumor Registry. Adequate evaluation of this group is not possible in the present study. It is clear that such patients must be entered into the Registry in the future.

Table 4 compares the RIH data with comparable information compiled from 7 geographically separated hospital registries and 3 central registries by Hickey and Showalter among patients with the registry accession dates between 1951 and 1958.[2,3] The RIH results are comparable to those observed by Hickey and Showalter. The data recorded from all 3 sources are remarkably close for observed 5-year survival rate, i.e. 60-62 per cent for surgery alone and 43-45 per cent for combined surgery-radiation. Relative rates from 3 central and 7 hospital registries show a fairly uniform increase over observed rates. Although relative rates were not available for the RIH experience, it seems likely

(Continued on next page)

TABLE 3
CARCINOMA OF THE BREAST (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.
All Stages

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Surv.	Tot. Orig. Rx.
1956	84	50	0	0	3	0	9	5	3	1	56	99
1957	80	51	0	0	3	0	9	5	6	0	56	98
1958	88	55	0	0	1	0	12	4	9	1	60	110
1959	80	48	0	0	3	0	16	6	13	1	55	112
1960	82	53	0	0	2	0	23	10	4	3	66	111
Total	414	257	0	0	12	0	69	30	35	6	293	530
		62%		0%		0%		43%		17%	55%	

TABLE 4
CARCINOMA OF THE BREAST
Comparison of 5-year Survival Data
All Stages

		Surgery obsvd. rate %	Surgery rel. rate %	No.	Surgery & X-ray obsvd. rate %	Surgery & X-ray rel. rate %	No.	X-ray obsvd. rate %	X-ray rel. rate %
R.I.H.	414	62	—	69	43	—	12	0	—
*7hosp. reg.	2,293	60	69	839	43	45	352	10	13
*central reg.	10,251	60	68	2,917	45	50	653	10	13

*From Hickey and Griswold. Proc. Fourth Nat. Ca. Conf. 251-262: 1960: and Nat. Ca. Inst. Monograph No. 6, p 21, 1961.

List of Hospital and Central Registries.

Albert Eistein Medical Center
Charity Hospital
Flower-Fifth Avenue Hospitals
Indiana University Medical Center
Roswell Park Memorial Institute
State University of Iowa Hospital
University of Chicago Clinics
California Tumor Registry
Connecticut Tumor Registry
Massachusetts Cancer Register

that the observed rates at RIH (nearly identical with those from the other 10 registries) would yield comparable relative rates.

The extremely poor results recorded for radiotherapy alone from all 3 sources may reflect the frequent relegation of patients with regional involvement to this modality of treatment. When localized and regional involvement were compared,[2,3] 55 per cent of 176 patients with localized and 22 per cent of 608 with regional involvement survived 5 years or more (study between 1938 and 1950). Among the patients studied by the same workers for the period 1957-1958, only 38 per cent of 77 patients with localized and 18 per cent of 316 with regional involvement survived 5 years or more. The end results from radiotherapy, when all types of involvement are considered, appear to be quite poor. This observation may reflect the relative de-emphasis of the curative possibilities of radiotherapy for carcinoma of the breast in the recent years in the United States. It is of interest that better results were obtained prior to 1951 than subsequent to that time.

Table 5 indicates the 5-year survival of patients arranged in 5 separate age groups by stages. RIH results are compared with the combined data of the 7 hospital and 3 central registries mentioned earlier in this report.

It is evident that the number of patients recorded for RIH in each age group is much smaller than those observed for the 10 registries compared. For this reason the validity of any observations made in comparison of end-results may be open to question. However, 5-year survival for all stages in the age groups from 44 through 64 years among all patients who received surgery alone, from all registries, is essentially the same, i.e. 65 per cent—69 per cent. In the age groups, "65-74" and "Over 74," the RIH results are less favorable than for the other institutions: i.e. (age65-74) 55 per cent for RIH and 68 per cent for 10 registries: (age over 74) 55 per cent for RIH and 76 per cent for 10 registries. No immediate explanation for this discrepancy is evident. It should be recalled, however, that *observed rate* for RIH is being compared with *relative rate* for the other registries. Inasmuch as *relative rates* can be expected to be somewhat higher than *observed rates,* the results are more nearly comparable.

When all age groups in the 10 registries are compared, survival is almost constant between 66 and 68 per cent, while it rises to 76 per cent for the "over 74" group. While there is a slightly increased survival in aged women treated with surgery alone in 10 registries, there is an apparent *decrease* in survival in reverse ratio to age in RIH. A similar relationship was noted in the 2 older age groups, between RIH and the 10 registries, when combined surgery-radiation therapy was used. The reasons for this apparent difference in effectiveness of "curative" procedures were not investigated. Some possible explanations are suggested:

1. Greater use of "simple" or "modified radical" surgical procedures among older age groups at RIH.
2. Greater use of "simple" surgical procedure and more dependence on combined radiotherapy in the age group above 74 years.

Study of data for Stages I and II reveals no marked discrepancy between results for RIH and 10 other registries. It is interesting to note that there is a small difference (of questionable significance) between 5-year survival in Stage I patients treated with surgery and those receiving combined surgery-radiation. Patients receiving combined treatment actually experienced a somewhat lower 5-year survival rate than those treated with surgery alone in both the RIH and other registry

TABLE 5
CARCINOMA OF THE BREAST
Comparison of 5-Year Survival by Age Distribution
All Stages

	Under 45				45-54				55-64				65-74				Over 74			
	RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
All Stages																				
Surgery	69	67	2570	66	111	69	2954	68	77	65	2881	66	95	55	2599	68	62	55	1540	76
Surg. & Rad	16	44	876	46	20	45	1023	50	18	50	914	47	8	38	695	46	7	29	248	58
Radiation	2	0	111	16	0	0	178	8	4	0	235	7	5	0	269	11	1	0	212	29
Stage I																				
Surgery	39	72	1392	83	56	80	1521	84	39	72	1441	85	56	63	1348	84	36	64	845	93
Surg. & Rad.	2	100	187	77	4	75	192	74	4	75	186	73	5	60	162	75	0	0	79	—
Radiation	Insignificant Number Treated																			
Stage II																				
Surgery	29	38	976	50	48	50	1184	53	36	23	1171	50	34	15	1046	55	21	43	541	60
Surg. & Rad.	10	50	553	41	11	55	683	47	10	40	581	46	4	25	420	41	6	17	125	—
Radiation	Insignificant Number Treated																			

groups. Comparison of surgery and combined surgery-radiation in Stage II patients indicates borderline significant difference in 5-year survival for both studies. These results compare favorably with those reported by Hickey and Showalter[2] who reported 48 per cent 5-year survival for surgery alone in regional disease and 46 per cent when surgery-radiation therapy was used. The actual 5-year survival for Stages I and II in RIH (35 per cent) is somewhat lower than for the other registries (50 per cent) in this study. The greatest difference in 5-year survival was noted in the older age groups and has been referred to earlier in this report. It may be tentatively concluded that combined surgery-radiation therapy for regional disease in carcinoma of the breast does not increase the incidence of 5-year survival over that obtained following surgery alone.

CARCINOMA OF THE CERVIX

337 patients with carcinoma of the cervix were observed at RIH from 1956 through 1960. 287 of these received their original treatment at RIH, while 50 were initially treated elsewhere (Table 6).

The overall survival among all those first treated at RIH (287) was 62 per cent (Table 7). 100 (85 per cent) of 117 patients treated by surgery survived 5 years or longer, while only 51 (46 per cent) of 112 who received interstitial radiation without surgery experienced 5-year survivorship.

TABLE 6
CARCINOMA OF THE CERVIX AT R.I.H.
1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	80	21	60	0	60
1957	79	9	*70	0	70
1958	83	12	72	0	72
1959	47	2	*44	0	44
1960	48	6	*41	0	41
Total	337	50	287	0	287

*1957 1 patient lost to follow up
*1959 2 patients lost to follow up
*1960 2 patients lost to follow up

A small number of patients who were treated with external radiation alone had a poor 5-year survival rate (6 per cent). It is interesting to note that 22 of 27 patients treated with combined surgery and radiation had a survival rate of 81 per cent. Comparison is made in Table 8 between RIH results and those from 10 registries. When all stages are combined, the RIH experience compares favorably with that of other institutions. The small number of patients treated by combined surgery and radiation at RIH with 81 per cent 5-year survival is probably not significant. In the 10-registry study,[3] localized cervical cancer treated

(Continued on next page)

TABLE 7
CARCINOMA OF THE CERVIX (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.
All Stages

Rx.	Surg.	5-Yr. Surv.	Cobalt and Radium or Radon.	5-yr. Surv.	or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Surv.	Tot. Orig. Rx.
1956	10	8	38	20	3	0	7	6	2	0	34	60
1957	31	26	22	12	5	1	7	7	4	2	48	70
1958	43	40	19	8	3	0	6	4	1	0	52	72
1959	20	15	15	4	4	0	5	3	0	0	22	44
1960	13	11	18	7	2	0	2	2	6	1	21	41
Total	117	100	112	51	17	1	27	22	13	3	177	287
		85%		46%		6%		81%		23%	62....	

TABLE 8
CARCINOMA OF THE CERVIX, 1956-1960
All Stages
Comparison of 5-Year Survival Data

		Surgery obsvd. rate	Surgery rel. rate		Surgery & X-ray obsvd. rate	Surgery & X-ray rel. rate		X-ray obsvd. rate	X-ray rel. rate
		%	%	No.	%	%	No.	%	%
R.I.H.	117	85	—	27	81	—	112	46	—
*7 hosp. reg.	863	81	84	535	59	61	4,492	50	54
*3 central reg.									

*From Hickey and Griswold. Proc. Fourth Nat. Ca. Conf. 251-262: 1960: and Nat. Ca. Inst. Monograph No. 6 p. 21, 1961.

by combined surgery and radiation yielded a 5-year survival rate of 70 per cent, while only 47 per cent 5-year survival was noted when regional spread disease was present. The degree of success in combined surgery- radiation therapy was directly related to the degrees of localization of the lesion. A survey of the small RIH group treated by the combined method confirmed that this treatment was used primarily in well-localized "early" disease (Table 9). Therefore, it is evident that RIH experience is comparable to that in the 10-registry series.

TABLE 9
CARCINOMA OF THE CERVIX
5-Year Survival
Surgery and Radiation Therapy

*Stage	No.	% of group	5-Year Survival %
O	1	4	100
I	17	63	82
II	6	22	75
III	3	11	67
Totals	27	100	81

*League of Nations

Table 10 indicates 5-year survival by age distribution. Surgery resulted in the best 5-year survivorship for all ages through age 64 for all registries studied. The number of patients in the RIH registry was small and would probably not be statistically significant. The somewhat better survival rate in the surgically treated group at RIH probably represents a higher degree of selection of early disease at RIH as compared with the 10-registry series. It is interesting to note that, although the RIH numbers are small, the results from radiation therapy alone are better in the 10-registry group than at RIH. This observation may reflect the selection of more advanced disease for radiation therapy at RIH including a number of borderline patients. This would normally occur if a greater number of earlier cases were subjected to surgery. It appears that 5-year survival among all registries studied is comparable, with best results among groups below age 65 receiving surgery or combined surgery-radiation therapy.

CARCINOMA OF THE LARGE BOWEL

For the purposes of this report, carcinoma of the large bowel was subdivided as indicated in Table 11.

TABLE 11
CARCINOMA OF THE LARGE BOWEL AT R.I.H.
1956-1960

	Total No.	"Operable" No.
Rectum	184	128
*Recto-Sigmoid	80	66
Colon	424	294
Cecum	71	54
Total	759	542

*Includes site designated "sigmoid"

Figure 1 indicates the distribution of operable lesions in the large intestine in the RIH series. These observations compare well with other series, although a smaller incidence has been reported in the cecum and a somewhat higher number in the rectosigmoid.[4,5,6] The overall 5-year survivorship at RIH following surgery for all areas of the large bowel is 42 per cent. Five-year survival of 39 per cent was reported by Clayman.[7] The 5-year survival of 26 per cent for rectosigmoid carcinoma is lower than reported by others (Gregg et al.[4] 38 per cent). The reasons for this discrepancy were

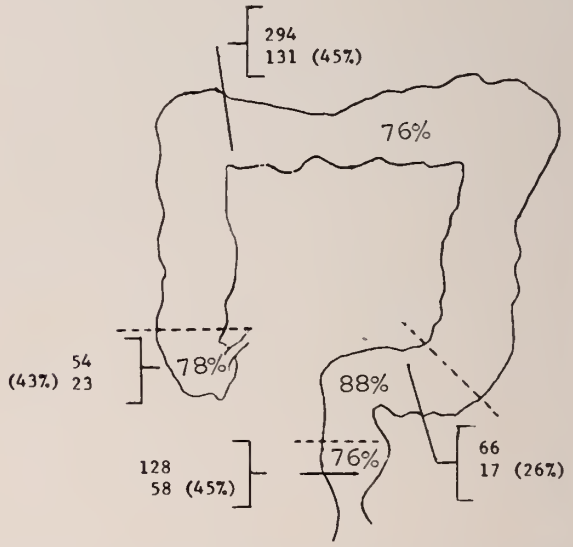


Figure 1: Percent sign in segments (broken lines) indicates incidence of operable lesions. Bracketed figures represent number of operations, number of 5-year survivals and percent 5-year survival rate.

TABLE 10
CARINOMA OF THE CERVIX, 1956-1960
Comparison of a 5-Year Survival by Age Distribution
All Stages

	Under 45				45-54				55-64				65-74				Over 74			
	RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Surgery	73	90	483	91	21	86	214	76	15	93	104	74	8	50	53	—	1	0	9	—
Surg. & Rad.	8	75	243	62	9	89	148	53	4	100	98	72	6	67	39	—	0	0	7	—
Radiation	22	37	1331	57	35	49	1177	52	33	42	1058	52	25	44	661	57	14	14	265	50

not investigated, but would be an interesting subject of future study.

CARCINOMA OF THE RECTUM

Carcinoma of the rectum was observed in 184 patients from 1956 through 1960 at RIH. Of the total number 168 received initial therapy at RIH while 16 patients wer originally treated elsewhere (Table 12). Five-year survival for those initially treated at RIH is expressed in Table 13.

TABLE 12
CARCINOMA OF THE RECTUM AT R.I.H.
1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	35	3	32	13	19
1957	42	4	38	20	18
1958	36	4	32	22	10
1959	42	0	42	23	19
1960	29	5	24	11	13
Total	184	16	168	89	79

Definitive surgery was applied in 128 patients, of whom 57 (44 per cent) survived 5 years or longer. An insignificant number of patients were treated with various forms of radiation with no 5-year survivals. The total number of patients surviving 5-years or longer, when they received initial therapy at RIH was 36 per cent.

Table 14 compares RIH experience with that of 10 registries. The small number of cases from RIH renders classification by stage and surgical procedure insignificant. The vast majority of treatable patients with carcinoma of the rectum received only surgical treatment, and represented 70 per cent of those observed at RIH during the period under study. Forty-four per cent of these patients survived 5 years or longer as compared with 36 per cent from the 10-registry survey. This is not considered to be a significant difference.

When the cases are distributed among 5 age groups (Table 15), 5-year survivorship appears to be somewhat greater among the RIH patients in the younger age groups. The small number of patients probably renders a valid comparison with the 10-registry study impracticable. However, 5-year survival following adequate surgery is 47-50 per cent in both the RIH and 10-registry study.

CARCINOMA OF THE RECTOSIGMOID, COLON, AND CECUM

A brief summary of the 5-year survival observations on each of the 3 remaining sections of the

(Continued on next page)

TABLE 13
CARCINOMA OF THE RECTUM (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Orig. Rx.	Tot. Surv.
1956	22	9	1	0	2	0	0	0	7	1	32	10
1957	27	10	0	0	0	0	0	0	11	0	38	10
1958	26	9	0	0	0	0	1	0	5	1	32	10
1959	31	18	0	0	1	0	0	0	10	0	42	18
1960	22	11	0	0	0	0	0	0	2	0	24	11
Total	128	57	1	0	3	0	1	0	35	2	168	59
		44%		0%						6%		36%

TABLE 14
CARCINOMA OF THE RECTUM, 1956-1960
All Stages
Comparison of 5-Year Survival Data

		Surgery obsvd. rate	Surgery rel. rate	Surgery & X-ray obsvd. rate	Surgery & X-ray rel. rate	X-ray obsvd. rate	X-ray rel. rate
		%	%	%	%	%	%
R.I.H.	128	44	—	0	—	0	—
*7 hosp. reg.	3,540	36	46	—	—	6	9
*3 central reg.							

TABLE 15
CARCINOMA OF THE RECTUM, 1956-1960
Comparison of a 5-Year Survival by Age Distribution
All Stages

	Under 45				45-54				55-64				65-74				Over 74			
	RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.		RIH		10 Reg.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Surgery	7	100	208	49	16	62	461	46	43	44	1042	49	36	39	1221	43	26	27	608	46
Surg. & Rad.	0	0	4	—	1	0	9	—	0	0	10	—	0	0	9	—	0	0	8	—
Radiation	0	0	1	—	1	0	7	—	0	0	11	—	2	0	22	—	0	0	15	—

large intestine will be presented. Comparison of combined observations of the entire large intestine (exclusive of rectum) with the 10-registry survey will not be made because of the methods used in recording the latter study.

CARCINOMA OF THE RECTOSIGMOID

Seventy-five of 80 patients observed at RIH during the period studied received initial treatment at RIH (Table 16). Table 17 indicates the results of treatment. Seventeen of 66 patients (26 per cent) survived 5 years or longer following surgery (Table 17). This rate of survival is considerably lower than that observed (44 per cent) for carcinoma of the rectum among the RIH patients. In addition, survival of 47.2 per cent following anterior resection of rectosigmoid cancer was reported by Bacon et al.[8] It was concluded from that study that anterior resection was not recommended for rectosigmoid carcinoma because of the relatively low 5-year survivorship. Vandertol et al.[9] studied 1,766 "favorable" lesions of the rectum and rectosigmoid removed by anterior resection and reported a 5-year survival rate of 56 per cent. It has been suggested that the sometimes less favorable results observed after abdominoperineal resection indicate a selection of more advanced cases. Therefore, the RIH results may reflect treatment of more advanced disease than described in other reports. The total number of RIH cases is also extremely small and cannot properly be compared with larger series. More intensive study of RIH results seems indicated from the data presented in this report.

TABLE 16
CARCINOMA OF THE RECTOSIGMOID
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	19	1	18	10	8
1957	14	1	13	6	7
1958	19	2	17	9	8
1959	14	0	14	5	9
1960	14	1	13	7	6
Total	80	5	75	37	38

CARCINOMA OF THE COLON

Carcinoma of the colon, excluding sigmoid and cecum, occurred in 424 patients at RIH during the 5-year period studied. Of this number, 385 initial treatments were carried out (Table 18). The various treatments are indicated in Table 19. Of 294 patients operated upon, 131 (44 per cent) survived 5 years or longer. It is interesting to note that in this study 5-year survival rate following surgery is the same as in carcinoma of the rectum (44 per cent) and carcinoma of cecum (43 per cent). These results do not appear to be related to technical operability, inasmuch as the poorest results (26 per cent 5-year survivorship) were obtained among patients with carcinoma of the rectosigmoid, who had the highest rate of operability (Table 20). The low rate of survival among patients treated primarily with chemotherapy is noted (2 per cent 5-year survival). Although palliation with the 5-fluorinated pyrimidines (5-fluorouracil and 5-fluoro-2'-deoxyuridine) can be accomplished to the benefit of 15-20 per cent of patients, prolongation of life has not been documented.

TABLE 18
CARCINOMA OF THE COLON
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	99	17	82	35	47
1957	75	10	*64	32	32
1958	86	6	80	44	36
1959	94	1	*92	35	57
1960	70	3	67	32	35
Total	424	37	385	178	207

*1957 1 patient lost to follow up
*1959 1 patient lost to follow up

Five year survivorship, analyzed by age groups for all stages, is comparable to that in the 10-registry study. Under age 45, RIH experienced 37 per cent 5-year survival as compared with 38 per cent in the 10-registry group. Above age 45 through age 74, RIH recorded 57 per cent, 54 per cent and, 45 per cent in 3 age ranges, as opposed to 46 per cent, 38 per cent, and 38 per cent respectively in

TABLE 17
CARCINOMA OF THE RECTOSIGMOID
(1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-Yr. Surv.	Cobalt or X-Ray	5-yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Orig. Rx.	Tot. Surv.
1956	15	1	0	0	0	0	0	0	3	0	18	1
1957	10	6	0	0	0	0	0	0	3	0	13	6
1958	15	6	0	0	0	0	0	0	2	0	17	6
1959	14	2	0	0	0	0	0	0	0	0	14	2
1960	12	2	0	0	0	0	0	0	1	0	13	2
Total	66	17	0	0	0	0	0	0	9	0	75	17
		26%		0%		0%		0%		0%		23%

TABLE 19
CARCINOMA OF THE COLON (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Orig. Rx.	Tot. Surv.
1956	61	29	1	0	0	0	0	0	20	0	82	29
1957	48	25	0	0	0	0	0	0	16	0	64	25
1958	60	21	0	0	0	0	0	0	20	1	80	22
1959	74	38	0	0	3	0	0	0	15	0	92	38
1960	51	18	0	0	0	0	0	0	16	1	67	19
Total	294	131	1	0	3	0	0	0	87	2	385	133
		44%		0%		0%		0%		2%		35%

similar age groups in the 10-registry study. The somewhat better results at RIH are not explained. Above age 74, 5-year survivorship was 27 per cent in the RIH and 10-registry group.

More precise study of stage and location of the tumor as well as the definitive surgical procedure is needed.

TABLE 20
OPERABILITY RATE — R.I.H.

Carcinoma	Patients No.	% Operable	5-Yrs. Surv. %
Rectum	168	76	44
Rectosigmoid	75	88	26
Colon	385	76	45
Cecum	69	78	43

CARCINOMA OF THE CECUM

Seventy-one patients with carcinoma of the cecum were treated at RIH from 1956 through 1960 (Table 21). Of sixty-nine receiving primary treatment in this hospital, 54 were operated upon. The 5-year survival rate among the surgically treated group was 43 per cent (Table 22). Fourteen who received supportive or other palliative treatment including chemotherapy died in less than 5 years. The overall 5-year survival rate for all treatments is 33 per cent.

In a study by Berk et al.,[14] 21 (44 per cent) of 48 patients operated upon survived 5 years or longer. This figure is comparable to the 43 per cent 5-year survival observed in the RIH group and represents overall results for "curative" and "palliative" surgery. A somewhat higher survival rate of 60 per cent (18 of 30 patients) was noted following curative resection. Berk's cases included lesions of the ascending colon as well as the cecum. A study by Griffin et al.[15] reported 56 per cent 5-year over-all survival after surgery and 60 per cent after curative surgery. RIH cases were not divided into "curative" and "noncurative" groups and cannot be compared in this fashion.

TABLE 21
CARCINOMA OF THE CECUM
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	12	1	11	6	5
1957	18	0	18	8	10
1958	14	0	14	10	4
1959	12	0	12	7	5
1960	15	1	14	4	10
Total	71	2	69	35	34

BRONCHOGENIC CARCINOMA

During the 5-year period of this study 328 patients with bronchogenic carcinoma were observed at RIH (Table 23). Of this number, 292 had received no previous therapy. Fifty-one were suitable for surgery, yielding a 5-year survival rate of 22 per cent (11 patients) (Table 24). In a report of patients undergoing resection for bronchogenic carcinoma (among 1,742 admissions over a 15-year period) 28.5 per cent survived over 5 years.[10] This figure compares favorably with the RIH survival rate of 22 per cent. A study of 6,086 patients with bronchogenic carcinoma observed at

(Continued on next page)

TABLE 22
CARCINOMA OF THE CECUM (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Orig. Rx.	Tot. Surv.
1956	9	3	0	0	0	0	0	0	2	0	11	3
1957	12	5	0	0	0	0	0	0	6	0	18	5
1958	11	6	0	0	0	0	0	0	2	0	14	6
1959	9	3	0	0	0	0	0	0	3	0	12	3
1960	13	6	0	0	0	0	0	0	1	0	14	6
Total	54	23	0	0	0	0	0	0	14	0	69	23
		43%		0%		0%		0%		0%		33%

TABLE 23
BRONCHOGENIC CARCINOMA
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	73	13	60	54	6
1957	60	9	51	45	6
1958	67	7	60	53	7
1959	68	1	67	58	9
1960	60	6	54	50	4
Total	328	36	292	260	32

the Royal Marsden and Brompton Hospitals from 1951 to 1963 recorded a 5-year survival rate of 27 per cent among 1,093 patients who underwent resection.[11] The overall survival after 5 years in the RIH group was 5 per cent, which is comparable to the results recorded by Strug et al.[10] of 4.3 per cent. The overall 5-year survivorship reported by Bignall et al.[11] was 7 per cent.

Radiotherapy offers little palliative effect for bronchogenic carcinoma and no 5-year survivors were noted in the RIH study. Bignall reported 3 per cent 5-year survivors among 648 patients treated with radiotherapy.[11]

The grim results of the surgical attempt to eradicate bronchogenic carcinoma are evident. It is interesting that during the period from 1951-1963 in Bignall's series,[11] there was no increase in rate of 5-year survivorship, in spite of increased aggressiveness in the operating room. Indeed, lobectomy was done increasingly often and a 5-year survival rate of 35 per cent was observed as compared to 22 per cent for resection. Significant cure rate from bronchogenic carcinoma continues to elude the most vigorous treatment.

TABLE 24
BRONCHOGENIC CARCINOMA (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Surv.
1956	13	3	0	0	2	0	0	0	45	0	3
1957	9	2	0	0	4	0	0	0	38	0	2
1958	6	1	0	0	10	0	0	0	44	1	2
1959	12	3	0	0	16	0	0	0	39	0	3
1960	11	2	0	0	12	0	0	0	31	2	4
Total	51	11	0	0	44	0	0	0	197	3	14
		22%		0%		0%		0%		2%	5%

CARCINOMA OF THE LARYNX

Between 1956 and 1960, 67 patients with carcinoma of the larynx were admitted to RIH (Table 25). Of 44 patients subjected to surgery, 27 (61 per cent) survived 5 years or longer (Table 26). Linden[13] reported a 54 per cent 5-year survival rate following surgery for all stages of laryngeal carcinoma among 309 patients. It is interesting that 5-year survival rate of 61 per cent for all stages compares well with the rate of 64 per cent reported by Linden for the localized lesions. Although the patients in the RIH study are not grouped by stage, it is probable that more localized lesions were treated by surgery at RIH than in Linden's series. The low RIH 5-year survival for those treated by irradiation (0 per cent) compared with 28 per cent reported by Linden further suggests that less favorable cases were treated by irradiation while those with better outlook were operated upon at RIH. It is also pertinent that localized lesions biopsied outside the hospital often

TABLE 25
CARCINOMA OF THE LARYNX
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	12	2	10	10	0
1957	9	1	8	8	0
1958	10	2	8	8	0
1959	19	1	18	18	0
1960	17	0	17	17	0
Total	67	6	61	61	0

TABLE 26
CARCINOMA OF THE LARYNX (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Orig. Rx.	Tot. Surv.
1956	7	6	0	0	2	0	0	0	1	1	10	7
1957	7	4	0	0	0	0	0	0	1	0	8	4
1958	7	4	0	0	0	0	0	0	1	0	8	4
1959	13	8	0	0	4	0	0	0	1	1	18	9
1960	10	5	0	0	6	0	1	0	0	0	17	5
Total	44	27	0	0	12	0	1	0	4	2	61	29
		61%		0%		0%		0%		50%		48%

are referred to the radiotherapy department without admission, and therefore are not included in the data of this study.

CARCINOMA OF THE TONGUE

Only 43 patients with carcinoma of the tongue were observed at RIH during the 5-year period covered by this study (Table 27). Six (40 per cent) of 15 patients operated on survived 5 years or more, while 4 of 15 patients who received radiotherapy experienced 5-year or greater survival (Table 28). The extremely small series observed makes meaningful comparison with other studies somewhat difficult. However, the 10-registry study yielded 43 per cent and 21 per cent 5-year survival following surgery or radiotherapy respectively. These data compare very well with the RIH figures.

The 5-year survival following surgery among 608 patients with carcinoma of the tongue reported by Frazell and Lucas[12] was 43.5 per cent. Local extension (partial glossectomy) was carried out for small or localized primary lesion without palpable neck metastasis. Among 381 patients treated in this way, 218 (57 per cent) were free of disease in 5 years. Of 227 patients subjected to radical surgery, 68 (30 per cent) sustained 5-year survivorship. The RIH experience compares favorably with Frazell's results. The 10-registry study yielded a five-year survival rate of 52 per cent following surgical treatment and 32 per cent after irradiation.

Interstitial irradiation was administered to 15 patients in the RIH study yielding a 5-year survival rate of 27 per cent. It is of interest that 4 patients who received external irradiation succumbed. Frazell reported 624 patients who received either external or interstitial irradiation, separately or in combination, with an overall 5-year survival rate of 28 per cent. It should be recalled that most of these patients in both studies presented "unfavorable" tumors at the onset of therapy. Control of the primary lesion as well as metastatic nodes by radiotherapy was poor in both series and accounts for the low "cure rate."

TABLE 27
CARCINOMA OF THE TONGUE
R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	11	2	9	7	2
1957	7	1	6	6	0
1958	10	2	8	5	3
1959	7	0	7	3	4
1960	8	0	8	7	1
Total	43	5	38	28	10

CARCINOMA OF THE FLOOR OF THE MOUTH

Of 36 patients observed, 30 were treated for the first time at RIH (Table 29). Fifteen received surgery, of whom 4 (27 per cent) survived 5 years or more (Table 30). Four (28 per cent) of 14 patients who received radiation therapy experienced 5-year survivorship.

The extremely small number of patients in this category excluded fruitful comparison with other reports.

(Continued on next page)

TABLE 28
CARCINOMA OF THE TONGUE (1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Cobalt or X-Ray	5-Yr. Surv.	Comb. Surg. & Rad.	5-Yr. Surv.	Chemo. Rx. and Other Rx.	5-Yr. Surv.	Tot. Orig. Rx.	Tot. Surv.
1956	2	1	5	1	2	0	0	0	0	0	9	2
1957	2	1	2	0	0	0	0	0	2	0	6	1
1958	2	1	5	1	1	0	0	0	0	0	8	2
1959	3	3	3	2	0	0	0	0	1	0	7	5
1960	6	0	0	0	1	0	0	0	1	0	8	0
Total	15	6	15	4	4	0	0	0	4	0	38	10
		40%		27%		0%		0%		0%		26%

TABLE 30
CARCINOMA OF THE FLOOR OF THE MOUTH
(1956-1960)
5-Year Survival
Following Original Treatment at R.I.H.

Rx.	Surg.	5-Yr. Surv.	Radium or Radon.	5-yr. Surv.	Comb. or X-Ray	5-yr. Surv.	Comb. or & Rad.	5-yr. Surv.	Chemo. Rx. or Other	5-Yr. Surv.	Tot. Surv.
1956	2	1	3	1	0	0	0	0	0	0	2
1957	4	0	2	0	0	0	0	0	0	0	0
1958	4	2	3	1	0	0	0	0	2	0	3
1959	2	0	3	1	1	1	0	0	4	1	3
1960	3	1	1	0	1	0	0	0	0	0	1
Total	15	4	12	3	2	1	0	0	6	1	9
		27%		25%		50%		0%		17%	26%

TABLE 29

CARCINOMA OF THE FLOOR OF THE MOUTH

R.I.H. 1956-1960

Year	Pts. No.	Prev. Rx. No.	Orig. Rx. This Study No.	M	F
1956	6	1	5	5	0
1957	6	0	6	6	0
1958	9	0	0	8	1
1959	10	0	10	7	3
1960	5	0	5	4	1
Total	36	1	35	30	5

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GROUP COVERAGE IN BLUE PLANS

Due to the involvement in rate changes still pending before the state director of business regulation, the announcement to the membership regarding the Society's group coverage for Blue Cross and Physicians Service was necessarily delayed, and the announcements were not mailed until October 24, the date they were received at the Executive Office.

Members' attention is directed to the change this year effected by action of the committee on Medical Economics whereby the hospitalization coverage offers a choice of either semi-private coverage of a $45 per diem plan. The committee urges members to consider the semi-private plan in view of the steadily rising costs of hospital care.

The sizable increase in the rates for the Society's group is due in great measure to the heavy utilization of the Major Medical coverage during the past two years. This phase of the coverage whereby the Plans pay 80% of all health service chargeses up to a maximum of $30,000 in a given year resulted in many sizable claims. However, this is the type of coverage that members have wanted since it offers benefits for long term and catastrophic illness.

The coverage year for the Society's group starts on November 1, 1968 and continues until October 31, 1969. The annual premium payment is due by November 1, but in view of the delay in mailing notices the Plans have extended the due date for payment to NOVEMBER 15.

Members who will become 65 years of age during the payment year will be notified of the amount of their premium. But such members should contact Social Security, if they have not done so already, to determine whether or not they are eligible for hospitalization and medical coverage. Under an amendment effective the first of the current year there must be prior enrollment in Social Security by reason of payment into the Fund for eligibility for Part A of Medicare. After checking on eligibility, a member should notify the Blue Cross if he is not eligible for Medicare so that his Blue Cross coverage may be adjusted accordingly.

Dependent students in an accredited school or college are covered on their parents' membership until their 24th birthday under both the basic and major medical programs. Students who are between 19 and 24 must be listed, by name, on a Supplemental Application for Dependent Student Coverage. Any members desiring such an application card should contact the Executive Office (Tel. 331-3207), or indicate on the back of the payment notice such a request.

Editorials

SICKNESS AND SOCIETY

A Book Review

SICKNESS AND SOCIETY by Raymond S. Duff, M.D., and August B. Hollingshead, Ph.D. Harpers & Row, New York, 1968. $12.50

Reviewing this book is almost as frustrating as reading it. It is not easy reading. A copy was procured for the Rhode Island Medical Library after extensive critical reviews appeared in the press and at a time when no one in these parts had been able to obtain one for evaluation. The book produced scare headlines disproportionate to the value of its contents. A review in the Providence Journal was headed "U. S. Medicine: A Shocking Diagnosis." A review essay in Harper's Magazine by Doctor Franz J. Ingelfinger was titled "The Arch-Hospital: An Ailing Monopoly." An article based on the "explosive" book appeared in McCall's Magazine a whole month before publication. The Madison Avenue tactics used to sell a work of questionable value appear to this reviewer greatly to impair whatever objectivity and technical importance the book may possess and are greatly to be deplored.

The study, based on standard sociological sampling techniques, was made by a pediatrician (Duff) and a sociologist (Hollingshead). A group of 161 patients was investigated in depth from admission through post-hospital convalescence. Another group of 225 patients was studied somewhat less completely as a check on the first group. The work covered a period of seven years, of which three years were devoted to the collection of data. The project was carried out at the Grace-New Haven Medical Center of Yale University (for some obscure reason partially camouflaged in the text as Eastern University—Community Hospital Medical Center).

Vast generalities are projected from the study. In reading the descriptions of conditions at this institution one is first impelled to ask whether some of the problems there were not difficulties peculiar to it at the time of the study? This reviewer after 30 odd years of practice in large hospitals felt that he was reading of some strange land. Certainly the miserable open ward accommodations described have not been seen in acute hospitals in Rhode Island for many years. It is virtually impossible in any hospital in this State to distinguish ward service from semiprivate patients.

Much space was given to "overdiagnosis," "underdiagnosis," and "incorrect diagnosis." In one example the statement appears: "Our diagnosis is chest pain of uncertain diagnosis, and we rate Mr. C. as overdiagnosed physically." In this instance there was chest pain in a patient who had previously suffered a myocardial infarction. Electrocardiograms were not contributory. This reviewer believes that the authors, a pediatrician and a sociologist, are presumptuous in drawing this conclusion on the basis of their review of the record.

Considerable emphasis has been given in reviews of the book to certain statistics on the correctness of diagnosis. The authors' analysis of the data indicates to them that 75 per cent of surgical cases, but only 46 per cent of medical cases, were diagnosed correctly, with an overall average of 62 per cent, resulting in a comparable degree of "inappropriate" treatment based on misdiagnosis. Of the remaining 38 per cent, the analysis shows that 26 per cent were "underdiagnosed mentally," while 4 per cent were "misdiagnosed physically," and 8 per cent were "misdiagnosed physically and mentally." There is no sure way of evaluating these statistics from the data given; but they are certainly suspect and overdrawn. Neither of the authors is a psychiatrist, an internist, or a surgeon. It should be noted that if the 26 per cent of patients "underdiagnosed mentally" are added to the 62 per cent "diagnosed correctly," one comes up with 88 per cent with a correct physical diagnosis, which is quite a different order of magnitude. Whether or not psychiatrists should or, as a practical matter, could be in constant attendance on all hospital patients is not indicated by the authors. In this connection the authors state: "In brief, a patient may have been in as great need of professional treatment for his emotional difficulties as for his physical difficulties; yet during hospitalization he was treated by medical specialists who were concerned primarily with the organs and organ systems of the soma."

It is our conclusion that this book undertakes a serious indictment of hospital practice based on an inadequate sampling method presented in the manner of an overblown soap opera.

SEEBERT J. GOLDOWSKY, M.D.

HEMOPHILIA ADVANCES

Wintrobe in 1967 stated that "The site of synthesis of Factor VIII (antihemophilic factor, AHF) is unknown." It appears now that the mystery is close to solution. A colony of pure-bred beagles afflicted with true canine hemophilia A has been developed at Oklahoma State University. These animals have all of the stigmata of the disorder, including absence of Factor VIII. Norman, et al. of Boston early in 1968 reported that they had transplanted into these animals normal dog spleen homografts. Factor VIII in significant amounts was supplied to these animals by the graft. Based on these studies the authors concluded that the spleen is a major and transplantable whole-organ site of long-term Factor VIII synthesis. They further concluded that classic hemophilia A in animals, pathologically, genetically, and hematologically indistinguishable from that occurring in man, may within the time limits of the observations be cured by splenic transplantation from normal donors.

More recent transplant studies by Hougie, Marchioro, et al. of Seattle indicate an important role for the liver. Using similar experimental animals they 1. transplanted normal livers into hemophilic dogs and cured the disease, and 2. transplanted a liver from a hemophilic dog to a normal dog and caused the disease. 3. When a spleen from a hemophilic animal was transplanted into a normal dog, hemophilia did not occur. These authors conclude that the liver is the site of synthesis of Factor VIII. in hemophilia, but that it is premature to state that the liver is the site of synthesis of Factor VIII.

The exact place of the liver and spleen in the causation and control of the disease is yet to be delineated.

Meanwhile progress in the clinical control of the disorder can be recorded. Judith Pool of Stanford University in 1965 announced development of a high potency concentrate of antihemophilic globulin by a cryoprecipitation method. This material for intravenous infusion was 20 times as potent as plasma. Brinkhouse of North Carolina and Shanbrom of Baxter Laboratories have announced a new AHF substance 6 to 7 times as strong as Pool's cryoprecipitate. The new preparation, 30 to 50 times as active as plasma, has just been released for marketing.

These new developments, experimental and practical, indicate an early solution to the problem of hemophilia.

A VANISHING ART?

"Psychoanalysis is vanishing," according to Doctor T. Szasz, an analyst at the Upstate Medical Center in Syracuse, New York. The quotation appears in a rather lengthy but exceptionally fine critique of this sub-specialty of psychiatry by John Leo in the New York Times of August 4, 1968. Psychoanalysis is, in fact, "in danger of receding into an unimportant sidestream of psychiatry," according to Szasz.

Among the reasons given for this loss of popular interest during the past 15 years are the following:

1) Cheaper, quicker therapies that can reach all levels of society are being emphasized.
2) Psychoanalysis lacks "substantial research," and has "not yet proven effective by any scientific test."
3) It hasn't kept pace with the growth of psychiatry.
4) No major contributions or discoveries have been made in recent years, and therefore it has become "no longer a frontier."
5) Psychoanalysis suffers from "a lack of research.
6) "Effectiveness as a therapy is still questioned."
7) Psychoanalysis has lost its "capacity to grow."
8) Psychoanalysis is restricted to "a tightly controlled shop." which has "little room for doubters or critics."
9) Psychoanalysis is not usually found in a university context.
10) Psychoanalysis is depicted as a "rigidly dogmatic and defensive guild, not plugged into the major intellectual currents of the day."

Mr. Leo points out that 80 per cent of psychoanalysts actually work part-time in teaching positions, as well as advise schools and social agencies. Since criticism has been directed at the analysts for not recognizing their community responsibilities, this is an encouraging trend. At the present time, however, only 1,255 psychiatrists are fully qualified to class themselves psychoanalysts, while another 2,000, not so qualified, are working in the field of analysis.

This small group could hardly fill the great need for psychiatric skills, disciplines, and therapies adaptable to large numbers of patients. Popular interest in psychoanalysis has declined; it just hasn't met the challenge of the times by growth in knowledge and skills and in numbers of practitioners. Most contemporary psychoanalysts use the analytic contributions of the past as tools for the present in their psychotherapy.

Freud himself, the author and originator of psychoanalysis, had "doubts about the usefulness of psychoanalysis as a therapy." He thought it to be a "science of the unconscious rather than a therapeutic procedure." In some European countries, among them Russia, psychoanalysis has not been applied as a method of therapy.

The New York Times report is pertinent to the situation in Rhode Island, where there are approximately 63 psychiatrists, but only two fully qualified psychonanalysts. Ninety-seven per cent of Rhode Island psychiatrists are eclectic in their orientation. While the proportion of psychoanalysts to other psychiatrists in Rhode Island is somewhat lower than the national average, this small group is making a significant contribution to psychiatry in Rhode Island. The State, however, is fortunate in having a relatively large number of psychiatrists in proportion to its population. Many states have a much lower ratio. The psychiatric needs of our area, heavy as they are, apparently are being met by psychiatrists well trained in the many newer therapies now available. This would seem to be in accordance with the national trend.

NEW ANTI-VIRAL AGENT?

Bronilidene, a new broad spectrum antiviral agent, appears to have demonstrated its ability in animals to destroy the virus causing Asian Flu, according to workers at the Guardian Chemical Corporation of New York.

When the chemical was injected into mice infected by a virulent and usually fatal form of the Far Eastern strain of Asian influenza, all animals survived. Mice which had not received the agent died of the disease.

The new compound, it is claimed, combats existing infections, while vaccines must be given in advance and cannot be used after disease has been contracted. The studies indicate that repeated injections can be given without building up toxic or allergenic reactions. Within 48 hours after an injection, no trace of the drug is detectable in the bloodstream.

This new agen exhibits a low toxicity to mice, apparently far below the concentration necessary to treat the disease. Studies in rats and in dogs also demonstrated its safety.

In the tests, mice were infected by an active strain of Asian Flu through the nasal passage and, after the infection had time to incubate, the animals were given intravenous injections of Bronilidene in distilled water. One hundred per cent of the injected animals lived and were well, while all of those that did not receive the injections died within one week.

To prove that the animals that were saved had not been previously or naturally immune to the disease, they were subsequently reinfected by the disease after 20 days. No injection of Bronilidene was then given, and all died of the Asian Flu.

If further studies bear out these preliminary impressions, this could be an impressive development indeed.

COMMUNICABLE DISEASE NEWSLETTER

Among the avalanche of more or less ephemeral reading matter which crosses our desk day in and day out is a single sheet mimeographed newsletter from the Rhode Island State Department of Health. This weekly communication contains a summary of recent communicable disease information in the State. It is well-written, succinct, and readable. The contents are sufficiently varied to make perusal worthwhile.

A recent issue, for example, contained brief essays on "Sick Pheasants" and "Rhode Island Water," which were both informative and interesting reading.

We congratulate the Health Department on its sponsorship of this useful publication and look forward to its weekly arrival.

SATURDAY, NOVEMBER 16, 1968

HAWAIIAN FROLIC

at

RHODES STATE ROOM

COCKTAIL HOUR ..... 6:30 p.m.
BUFFET DINNER ..... 8:00 p.m.

DANCING to the DREW-CORCORAN ORCHESTRA

Dress: Informal (or Native Costume)

Hors d'oeuvres by members of the
WOMAN'S AUXILIARY

BENEFIT: MEDICAL CAREERS SCHOLARSHIP FUND

PUBLIC DEBT

The public debt of the United States Government has risen from $275 billion in 1950 to $345 billion in 1967 (and will probably hit $360 billion this year). This debt imposes a mortgage on the income and property of every American. The interest alone on the 1967 debt amounted to approximately $14 billion. That's more than was spent on the entire cost of the Federal Government for the three years 1928-29-30 or the three years 1931-32-33. There are 133 nations in the world. The combined indebtedness of all 133 is $43 billion less than the debt accumulated by the United States Government.

(National Program Letter)



SUPERSTITIOUS?

" My only feeling about superstition," quips Coach Duffy Daugherty, "is that it is unlucky to be behind at the end of the game."

Reprinted from Insurance Economics Surveys



THEY LOST IT ALL

"With all the talk about guaranteed annual incomes and cradle-to-grave security it might be well to take a look at what the historian and scholar Edward Gibbon wrote many years ago about the ancient Athenians. Once the center of the civilized world, Athens went on the skids and never again rose to its previous position of relative importance to other nations.

"Wrote Gibbon, 'In the end, more than they wanted freedom, they wanted security. The wanted a comfortable life and they lost it all — security, comfort, and freedom. When the Athenians finally wanted not to give to society, but for society to give to them, when the freedom they wished for most was freedom from responsibility, then Athens ceased to be free and never was free again.'

"It happened to Athens. It happened to Rome. It happened to other city-states and nations that turned soft. . . ."

— Indianapolis (Ind.) STAR



ONE SENTENCE ESSAY

I'm certain that the medical profession would respond instantly and almost unanimously to a request from Washington for a one-year moratorium on all price increases if the same request were made to all other professions and labor organizations.

. . . Robert S. Long, M.D., president of the American Society of Internal Medicine

SURGICAL MANAGEMENT OF BONY TUMORS OF MAXILLA AND MANDIBLE

Cosmetic and Functional Disabilities As Well As Survival Statistics Must Be Considered.

LEONARD J. TRIEDMAN, M.D., *of Providence R.I. Assistant Surgeon, Department of Surgery, Miriam Hospital and Providence Lying In Hospital.*

INTRODUCTION

Little attention has been given in the general medical literature to the various tumors of the mandible and maxilla. Reviews in the journals of oral surgery have generally reported isolated cases. Rarely have attempts been made to compile a record of experience and develop sound surgical principles in the management of these tumors.

As in the case of tumors elsewhere in the body, early recognition is important. A combined approach, planning adequate but not excessive resection with well thought out reconstructive procedures, will yield the greatest success. The final results cannot always be measured in five-year survival statistics alone but also in the cosmetic and functional disabilities with which the patient is left.

The benign and malignant tumors which are reviewed in this paper are examples of the more commonly encountered neoplasm groups. In the benign group are (1) bone cysts, (2) benign giant cell tumor, (3) neurofibromata, (4) monostotic fibrous dysplasia, and (5) adamantinomas of both upper and lower jaw. In the malignant group are (1) squamous carcinoma, (2) reticulum cell sarcoma, (3) osteogenic sarcoma, (4) fibrosarcoma, and (5) metastatic carcinoma.

CLASSIFICATION

The varying embryonic tissue origins relating to the dental anatomy are complex, and a basic understanding of them is necessary. A simple classification is therefore presented (Fig. 1).

(A) The first group is comprised of tumors of *odontogenic* origin. These are the most common and may be composed of one or all of the tissues which make up the common tooth. They may demonstrate primarily ectodermal elements, mesenchymal elements, or mixed elements. The interesting adamantinoma (ameloblastoma) falls within this group (Fig. 2, 3). It is derived from ectoderm and is most frequently located in the ramus of the mandible. There is no significant sex variation as it may be seen in any age group though peak incidence is in the third decade. These tumors are found six times as frequently in the mandible as in the maxilla, usually in the body of the mandible at its junction with the ascending ramus. It is a central tumor, either solid or cystic, and often multilocular. In its slow growth it causes expansion of bone, fracture, and facial deformity, but is relatively asymptomatic. The tumor recurs locally in about one-third of the cases, and there are scattered case reports in the literature of metastatic disease. A rare case of adamantinoma in the long bones has been reported.

The second group comprises the tumors of *osteogenic* origin. These are derived from osteogenic tissue, i.e., cells, and ancestors of cells, which when

(Continued on next page)

CLASSIFICATION

1. TUMORS OF ODONTOGENIC ORIGIN
2. TUMORS OF OSTEOGENIC ORIGIN.
3. CENTRAL TUMORS OF NON-ODONTOGENIC AND NON-OSTEOGENIC ORIGIN.
4. SOFT TISSUE TUMORS OF ORAL CAVITY.

Fig. 1. Classification of bony tumors of the maxilla and mandible.

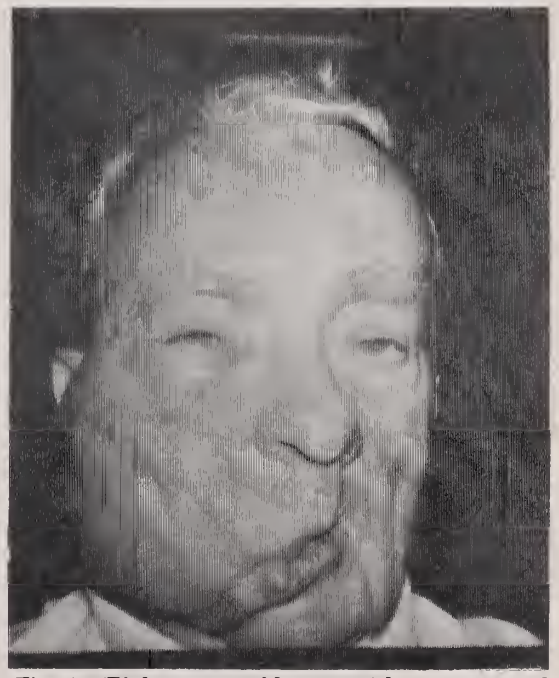


Fig. 2. Eighty year old man with recurrent adamantinoma of the maxilla. Primary tumor was removed twenty-five years previously.



Fig. 3. Resected specimen of adamantinoma in sixty eight year old female. Note resected normal mandible.

fully differentiated are known as osteoblasts. These tumors do not necessarily produce bone, but may form myxomatous tissue, collagen, osteoid, or cartilage. In the rapidly growing osteogenic sarcoma (Fig. 4), for instance, may be found areas of fibrosarcoma, myxosarcoma, or chondrosarcoma, and, if the cells have progressed to the osteoblastic stage, osteoid or bone. Angiosarcoma is very rare and very malignant (Fig. 5). *Central tumors* which develop intraosseously may be distinguished from *peripheral* tumors which develop in the soft tissues adjacent to the bone, encroach upon it, and often erode or infiltrate the bone.

The third group includes *central tumors of non-odontogenic* and *non-osteogenic* origin. These form from cells contained in the marrow and from blood vessels and nerves found in the jaws. Included also are those reachings the jaws through hematogenous channels. These tumors are *in* and not *of* bone. This group would include neurofibromata, central giant-cell tumors, metastatic carcinoma, and squamous carcinomata of the maxillary mucosa.



Fig. 4. Resected specimen of Fig. 5.

The unusual neurofibroma of the inferior alveolar nerve is a benign expansile osteolytic tumor, which tends to perforate the cortex and expand the periosteum. Clinically the patient complains of numbness or hypesthesia of the lip. X-ray studies show a connection of the tumor with the mandibular canal and expansion of its walls (Fig. 6).

The fourth and final group includes tumors of the *soft tissue of the oral cavity*. Practically all histologic varieties of tumors found in other parts of the body occur in the mouth. These form oral



Fig. 5. Angiosarcoma resected in elderly male.



Fig. 6. X-ray shows expansile lesion of medullary canal in right hemi-mandible. Pathological lesion was neurofibroma in a thirty-nine year old male.

mucosa and other soft tissue in and about the oral cavity. They vary widely from slowly growing benign tumors to rapidly growing malignant tumors. Only a few involve bone, typically by extension or invasion.

DIAGNOSIS

Clinical symptoms and physical signs frequently are so striking that the diagnosis is obvious. Pain, which is often seen with malignant tumors, may be associated with benign lesions or chronic inflammation. A history of rapid growth, usually an indication of poor prognosis, may commonly be found in benign bone cysts, especially when complicated by spontaneous hemorrhage or associated infection.

A history of trauma may on occasion help to reveal the nature of a tumor or yet may serve to conceal its true identity.

Careful examination of the involved area is necessary. A fixed ulcerated lesion about the jaw with or without hard nontender cervical lymph nodes is readily recognized. The nature of the neoplastic swelling, the involvement of adjacent neural structures, and the presence of hard nontender adenopathy give valuable assistance in diagnosis, yet rarely provide the whole answer.

In order to treat these tumors properly, all available diagnostic aids must be used and correctly interpreted. Roentgen examination will show whether the tumor is primarily osteolytic or osteoblastic. It will often given an indication of the malignancy or benignity of the lesion. Osteoblastic lesions show new formation of bone either within or adjacent to the jaw (Fig. 7). Osteolytic reaction demonstrates resorption and replacement of bone. Expansion of the marrow cavity strongly suggests disease originating within. X-ray studies of infiltrating tumor may show a gradual change from diseased to normal bone without definite demarcation. A punched out picture is seen with encapsulated central tumors. The multioculated adamantinoma is easily distinguished from the solitary bone cyst by x-ray examination (Fig. 8). X-ray studies of the bony face may identify local manifestations of generalized disease, such as hyperparathyroidism, xanthomatosis, multiple myeloma, or metastatic malignant tumor. The final answer lies with pathological examination.

Biopsy of the tumor prior to definitive surgery provides the most reliable indication of the best approach to management, whether radical or conservative surgery or radiotherapy. Frozen sections in the operating room at the time of surgery are extremely difficult for the pathologist to interpret and place an unfair burden on him. Adequate preliminary biopsy with permanent sections not only provides identification of the tumor but reveals the degree of cellular differentiation and the arrangement of the tumor cells as well as its effect in the host. We may learn whether it is encapsulated and expanding the bone, locally infiltrative and destroying the bone, or metastasizing via blood vessels or to lymph nodes.

SURGERY

Resection must be adequate to encompass the disease and consistent with minimal mutilation and loss of function. Complete removal of the tumor must be accomplished first. Later reconstructive procedures may be planned. One should be conservative only where cure is not jeopardized and radical where necessary; the first chance for cure is usually the best.

Prior to surgery, one must make certain that the bony tumor does not represent a manifestation of disseminated or generalized disease. X-ray studies of the base of the skull must be made to be

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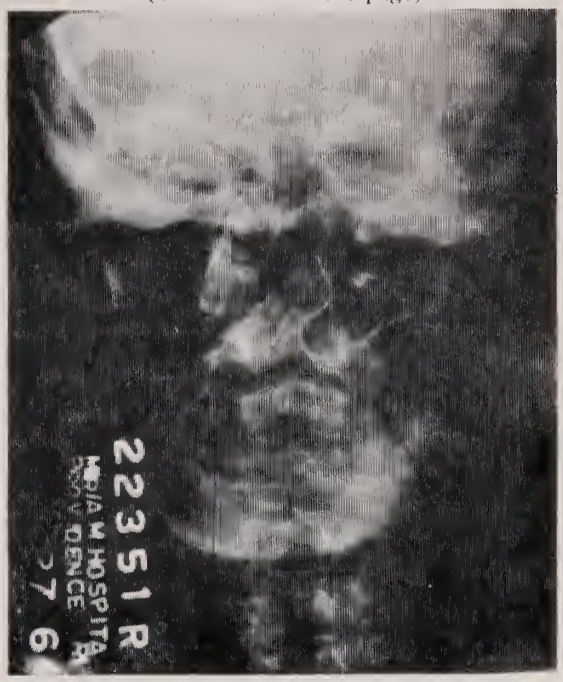


Fig. 7. Osteoblastic, osteogenic sarcoma in sixty-one year old woman. Note extensive osteoid production in x-ray.



Fig. 8. Classical x-ray appearance of adamantinoma of ramus of right mandible in fifty six year old negro female. Note preserved bone of ramus and eggshell calcification.

certain that there is no intracranial extension. Assessment of lymph nodes must also be carried out. Here the surgeon works in an extremely vascular area, and blood must always be readily available. Airway problems are of prime important in this type of surgery, and early elective tracheotomy is indicated with major resections. A good open airway and adequate prevention of aspiration of blood into the trachea and lungs during surgery is imperative. Tracheotomy, when chosen, should be done under local anaesthesia prior to the operation. If the patient is given general anaesthesia, the laryngeal reflex is still active, and one may encounter spasmodic closure of the glottis before the trachea can be opened. Prophylactic tracheotomy should always be done in conjunction with resection of the major portion of the mandible or maxilla. Loss of support or edema of the tongue may cause rapid and fatal airway obstruction in the post-operative period. At the termination of surgery adequate drainage of blood collections and antibiotic protection against the ever-present infection in the mouth must be assured.

Basic palatal reconstruction and a temporary prosthesis to insure suitable alimentation and discernable speech are of great importance following maxillary resection. This will be discussed later. A simple feeding tube to maintain nutrition in the immediate post-operative period is helpful.

Management of specific tumors of the mandible is now almost exclusively surgical. Cure of primary bone tumor by radiation alone is rare. Treatment by irradiation has lost favor because of low cure rates and a high incidence of post-radiation complications. Radio-osteonecrosis with the accompanying debilitating infection and pain is of such overriding consequence that the cure may well be worse than the disease.

Bone cysts are managed simply by marsupialization and packing. Neurofibromas and other similar benign central tumors may be treated by unroofing of bone and enucleation.

The group of large benign and locally recurrent tumors, i.e., adamantinomas (most common), myxomas, and tumors of salivary tissue type need special treatment. These are usually two to six centimeters in size and are encapsulated. Often enucleation endangers the integrity of the mandibular arch, and local excision is followed by seeding and recurrence. Here resection of the tumor together with uninvolved mandible at either end always effects a cure. These are ideal wounds for immediate reconstruction with medullary bone chips if the tumor location and size warrant. Resection of the symphysis, mental prominence, and anterior jaw demands reconstruction for a good cosmetic result.

If resection of the symphysis is carried out, the geniohyoid and genioglossus muscles are detached from the genial tubercles, and there is a marked tendency for recession of the chin with "Andy Gump" appearance to occur. Here, reconstruction with solid rib graft, medullary bone chips, or a Kirschner wire is carried out (Fig. 9). Adequate soft tissue coverage is essential to secure healing. Resection of mandible posteriorly leaves little functional or cosmetic defect, and reconstruction is far less important.



Fig. 9. X-ray shows simple fixation of mandibular fragments with Kirschner wire where anterior jaw has been resected. The patient's lesion was an osteogenic sarcoma.

Management of sarcoma is a more radical and difficult problem. Generally subtotal or total mandilectomy with or without immediate reconstruction is necessary. This type of tumor tends to spread up the marrow cavity, and generous resection of bone and soft tissue is indicated. Rarely are lymph nodes involved. The osteogenic sarcomas occurring in facial bones tend to be less aggressive than their counterparts in the long bones. A relationship to trauma is a common experience.

Surgery of the maxilla presents a somewhat different problem from the mandible. Adamantinomas may be treated with local excision and curettage or partial maxillectomy. Monostotic fibrous dysplasia represents a benign tumor originating in the spongiosa of the bone. It ordinarily has a self-limited growth pattern and should be treated conservatively by simple shaving of the tumor to fit the normal contour of the face. Squamous carci-

(Continued on Page 696)

DIAGNOSIS OF LUNG CANCER BY ORAL SECRETIONS AND BRONCHIAL WASHINGS

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ESTHER A. CREER, B.S., *of Providence, R.I. Supervisor, Cytology Laboratory, Rhode Island Hospital.*

Method Yields Highly Accurate Results.

It is well accepted that bronchogenic carcinoma can be diagnosed through examination of smears or secretions stained by the Papanicolaou method. This study was undertaken to compare the relative merits of specimens obtained from sputum and from bronchial washings in one hundred consecutive cases suspected of harboring bronchogenic carcinoma. All cases presented either x-ray evidence of or clinical symptoms suggestive of carcinoma. All were admitted to the hospital and underwent bronchoscopic examination. The plan of study was to procure a sputum specimen on admission, bronchial washings at the time of bronchoscopy, a sputum immediately after bronchoscopy, and another the following day. A determination would then be made as to which method gave the highest percentage of positive results, and also as to whether the time the oral specimen was obtained involved any advantage or disadvantage. After one year the cytologic findings were reviewed, together with tissue studies and clinical progress. The results are summarized in Table 1.

TABLE 1

Confirmed positive	41
Confirmed negative	41
False negative	12
False positive	1
Undetermined	5
	100

Special attention was then directed to two groups for further analysis, the confirmed positive and the false negative cases. There were forty-one confirmed positive cases. Of this group, eighteen had positive findings in both sputum and washings. Seven had positive sputum and negative washings, and five had negative sputum, but positive washings. Of the eighteen with positive findings in both sputum and washings, the sputum was positive before bronchoscopy in twelve cases and negative in four. Two had had no prior study. A suspicion that sputum might more likely become positive after bronchoscopy because of increased secretions and increased exfoliation was not confirmed. Only seven such cases, however, yielded a positive biopsy, which once again demonstrated the diagnostic value of cytology. These cases were strongly positive and were not a diagnostic problem. Bronchoscopy is of value in such cases in determining the position and extent of the lesion and thus in judging operability. Of the remaining twelve confirmed positive cases, seven were initially found to be positive by sputum examination and five by wash-

(Continued on next page)

TABLE 2

FALSE NEGATIVE CASES

Case No.	Location of Lesion	Pathologic Diagnosis	Tissue Obtained
1	Left Upper Lobe	Undiff. CA	Post Mortem
2	Left Upper Lobe	Undiff. CA with 3+ Hilar Nodes	Surgery
3	Left Upper Lobe	Undiff. CA with metastasis	Post Mortem
4	Right Upper Lobe	Undiff. CA	Post Mortem
5	Right Upper Lobe	Adeno. CA	Surgery
6	Left Upper Lobe	Undiff. CA with Nodes	Surgery
7	Main Stem	Undiff. CA	Surgery
8	Mediastinum	Undiff. CA	Surgery
9	Left Upper Lobe	Undiff. CA	Surgery
10	Left Upper Lobe	Epidermoid CA with 16+ Nodes	Surgery
11	Left Upper Lobe	Epidermoid CA	Surgery
12	Medistinal	Epidermoid CA	Surgery

ings. These results indicate the value of using all available diagnostic methods and not placing too much reliance on negative findings. Umiker[1] has indicated that less than 50 per cent of lung cancers can be diagnosed on a single sputum examination. When multiple specimens of both sputum and bronchial aspirations are examined, the percentage of correct positive diagnosis in his estimation should exceed 75 per cent. In this series, 79 per cent correct diagnoses were obtained.

The false negative group was comprised of cases not diagnosed by cytology, but in whom a later tissue diagnosis of carcinoma was made. The location of the lesion, pathologic diagnosis, and manner in which tissue was obtained are shown in Table 2. The location of nine of twelve of these lesions in the upper lobe was unexpected. This phenomenon warrants more attention in the future; repeated washings and repeated collections of sputum are certainly indicated. In the past a cough machine has not been used in our studies. It is suggested that the percentage of false negatives might be decreased by the employment of this apparatus.

The one false positive case in this series was one of two occurring in eight hundred and ninety tests done during 1966 at the Rhode Island Hospital. This constitutes an error of 0.22 per cent, high for our Department as there were no false positive cases in 1965 or 1967. The false positive case yielded one positive sputum out of six specimens, and one negative washing. At thoracotomy a right upper lobe pneumoconiosis was revealed. A retrospective study of the slide would still seem to warrant a positive reading.

CONCLUSIONS

1. Bronchogenic carcinoma can be diagnosed with a high degree of accurancy (99.78 per cent) by Papanicolaou smear of secretions. It was not possible to demonstrate that washings obtained by bronchoscopy were superior to sputum; nor was it possible to demonstrate an optimum time of collecting secretions.

2. A surprising number of upper lobe lesions resulted in false negative readings. Careful and persistent study must be given to these lesions.

3. The best results will be obtained when all diagnostic methods are utilized.[2] Bronchoscopy is indicated by positive sputum to detemine location and operability of lesion.

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110 Lockwood Street
Providence, R.I. 02903

BONY TUMORS OF MAXILLA AND MANDIBLE

(Continued from Page 692)

noma requires total maxillectomy with or without orbital exenteration. If the tumor arises in the floor of the sinus, it may be possible to preserve the inferior orbital plate, which acts as a support for the orbital contents. If it is necessary to remove the inferior orbital plate, the eye tends to drop to a lower level causing diplopia. Corneal ulceration may occur from inability to close the lids completely. If the ethmoid cells are involved, clean surgical removal requires excision of the infra-orbital plate and enucleation of the eye. Close proximity of the ethmoid cells to the paper thin cribriform plate must be recognized in the operating room. Resection of the cribriform plate and adjacent dura is practical where indicated. Invasion of the orbital contents requires removal of the eye, as well as supporting tissues. Rupture of the bony wall of the sinus at any point with invasion of adjacent tissue calls for inclusion of the involved area with a surrounding zone of healthy tissue. Deep extension into the pterygopalatine fossa or along the pharyngeal walls virtually precludes the possibility of cure. Invasion through the anterior or inferior wall, however, is not of itself incompatible with successful treatment. The involvement of cervical lymph nodes from cancer of the upper jaw is uncommon but does not preclude cure if the local tumor is operable. Total maxillectomy and orbital exenteration should carry an operative mortality of no more than three to five per cent, and an anticipated cure rate of approximately twenty-five per cent with squamous cancer.

RECONSTRUCTION

Following mandibular resection, if only the posterior two-thirds of the hemi-mandible is removed, the cosmetic deformity is slight, and interposition of a graft or splint is often unnecessary. When the bony defect approaches the midline so that the prominence of the chin is lost, consideration should be given to using some type of splint. Most replacements are of minimal functional or masticatory value because normal chewing requires precise articulation of teeth, a highly mobile temporomandibular joint, and the concerted action of the masticatory muscles. If the temporomandibular joint is sacrificed, these functions are lost. Materials for prothesis include autogenous bone grafts from the iliac crest or rib, which will yield about eighty per cent acceptance. Homologous bone replacement is simpler, but the incidence of infection is greater. Inert implants such as vitalium, stainless steel, or tantalum in the form of mesh, bars, or wires may be used. Their value lies primarily

(Continued on Page 697)



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Precautions: Lomotil is a Federally exempt narcotic with theoretically possible addictive potential at high dosage; this is not ordinarily a clinical problem. Use Lomotil with considerable caution in patients receiving addicting drugs. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur, signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils, tachycardia; continuous observation is necessary.

Adverse Reactions: Side effects reported with Lomotil therapy include nausea, sedation, dizziness, vomiting, pruritus, restlessness, abdominal discomfort, headache, angioneurotic edema, giant urticaria, lethargy, anorexia, numbness of the extremities, atropine effects, swelling of the gums, euphoria, depression and malaise. Respiratory depression and coma may occur with overdosage.

Dosage: The recommended initial daily dosages, given in divided doses until diarrhea is controlled, are as follows:

diarrheas...



- careful supervision
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Each tablet and each 5 cc. of liquid contains:
diphenoxylate hydrochloride ..... 2.5 mg.
(Warning: May be habit forming)
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Lomotil lowers the excessive intestinal propulsion characteristic of diarrhea. This reduction of precipitate intestinal flow allows a normal or more nearly normal reabsorption of fluid and electrolytes and counteracts the dehydration so hazardous to children.

Moreover, eight years' experience has demonstrated that Lomotil controls diarrhea with a minimum of unwanted secondary actions.

Senra del Valle and his associates[1] conducted a study of 477 children with diarrhea, most of whom were hospitalized with the disorder. Lomotil, used in 407 of the children, shortened the duration of the diarrhea.

Grinszpan, Goldstein and Divito[2] used Lomotil in 20 children with diarrhea and also reported a prompt disappearance of diarrhea. Harris and Beveridge[3] in a double-blind study of 50 children with diarrhea, however, found no clear pattern to suggest that Lomotil influenced the course of the condition.

Michener, Brown and Turnbull[4] added evidence supporting the beneficial effects of Lomotil in 80 children, concluding that Lomotil was highly useful in controlling abdominal cramping, diarrhea and hypermotility.

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-6 mo. . . . ½ tsp.* t.i.d. (3 mg.)
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-8 yr. . . . . 1 tsp. q.i.d. (8 mg.)
-12 yr. . . . 1 tsp. 5 times daily (10 mg.)
ults: . . . . 2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

d on 4 cc. per teaspoonful.

intenance dosage may be as low one-fourth the initial daily dosage.

References:

1. Senra del Valle, A.; Linfante de Rufinelli, E. B.; Brumetti, E., and Rossi, R. H.: El chlorhidrato de difenoxilato en las diarreas infantiles, Sem. Med. (Buenos Aires) *127*:475-484 (Oct. 4) 1965. 2. Grinszpan, I. L.; Goldstein, A., and Divito, J.: El chlorhidrato de difenoxilato en las diarreas infantiles, Sem. Med. (Buenos Aires) *125*:758-763 (Aug. 27) 1964. 3. Harris, M. J., and Beveridge, J.: Diphenoxylate in the Treatment of Acute Gastro-Enteritis in Children, Med. J. Australia 2:921-922 (Nov. 27) 1965. 4. Michener, W. M.; Brown, C. H., and Turnbull, R. B., Jr.: Ulcerative Colitis in Children. II. Medical and Surgical Therapy, Amer. J. Dis. Child. *108*:236-242 (Sept.) 1964.

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BONY TUMORS OF MAXILLA AND MANDIBLE

(Concluded from Page 696)

in their simplicity and availability. They will temporarily maintain contour and prevent contraction until definitive and appropriate soft tissue and bone replacement can be instituted. Success requires adequate fixation, abundant soft tissue cover, and no infection. Most metallic implants will eventually be rejected, but by that time they may have served a useful function.

At the time of maxillary resection the application of split-thickness skin grafts to cover the intra-oral wounds facilitates local care and diminishes the cosmetic deformity resulting from contracture of the cheek. A wound should not be left open to heal secondarily with granulation tissue, if closure is possible. Primary healing is of first importance, since residual or recurrent disease may be undetected for prolonged periods in the presence of granulation tissue and the associated inflammation. Raw bony surfaces especially should not be left uncovered, since the localized osteomyelitis which ensues will result in a protracted period of delayed healing. If mucosa is not locally available for closure, split-thickness skingrafts and pedicle flaps become important substitutes.

Of even greater importance is the early use of a dental prosthesis, first temporary and later permanent, to repair the defect in the palate. This allows the patient to eat and drink and relieves the speech difficulty, which is psychologically so distressing.

CONCLUSION

A discussion is presented of interesting and unusual tumors of the bones of the face. The surgical challenge which they present winds a narrow path between adequate tumor removal and preservation of appearance and function.

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[4]Martin, H.: Surgery of the Head and Neck Tumors. (Hoeber) Harper and Row, New York, 1962

[5]Symposium on Cancer of the Head and Neck. Given at the Annual Scientific Session of the American Cancer Society, Inc., October 28-29, 1957

DERMAQUIZ ANSWER

(See Page 649)

Left, Dermatitis venenata medicamentosa from a strong undiluted chemical applied to kill, mostly likely, imaginary ringworm. Right, Diabetic Gangrene.



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Parepectolin for quick relief of acute diarrhea
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HOUSE OF DELEGATES of the RHODE ISLAND MEDICAL SOCIETY

Report of Meeting Held on September 25, 1968

A meeting of the House of Delegates of the Rhode Island Medical Society was held at the Medical Library, Providence, on Wednesday, September 25, 1968. The meeting was called to order by the President Doctor John J. Cunningham, at 8:10 p.m.

The following delegates were in attendance: Doctors Francis Lamb, John M. Vesey, Joseph E. Wittig, Robert C. Hayes, Alton Paull, Orland Smith, Freeman B. Agnelli, James A. McGrath, Leonard Staudinger, John J. Cunningham, Stanley D. Simon, Peter C. H. Erinakes; Stephen J. Hoye, John A. Dillon, Stanley D. Davies, J. Robert Bowen, Joseph Caruolo, Nathan Chaset, Henry B. Fletcher, Frank Fratantuono, Seebert J. Goldowsky, Herbert F. Hager, Milton Hamolsky, Joseph Lambiase, Robert V. Lewis, Thomas Littleton, William J. MacDonald, Peter L. Mathieu, William McDonnell, James B. Moran, Arnold Porter, George Charon, Edwin B. O'Reilly, Ralph F. Pike, Gustavo A. Motta, Richard P. Sexton, John Turner II, Henry M. Tyszkowski, Elihu S. Wing, and Edmund T. Hackman.

Also present were John E. Farrell, Executive Secretary; Dr. Francis B. Sargent, Chairman of the Mediation Committee; and Dr. Henry Izeman, Chairman of the Diabetes Committee.

Members of the House absent were: Doctors Charles E. Millard, Edward Asprinio, Charles Dotterer, Charles Serbst, Edmund Billings, Earl J. Mara, Joseph Ruisi, Roger Berard, Roger Fontaine, Joseph E. Cannon, John T. Barrett, Warren W. Francis, Alvin Gendreau, John F. W. Gilman, I. T. Gilson, J. P. Grady, R. D. Richardson, C. S. Sawyer, B. Webber.

Minutes of Previous Meeting

The President noted that the minutes of the April 24, 1968 meeting of the House had been sent to the members by the Secretary and had been published in the RHODE ISLAND MEDICAL JOURNAL.

Action: A motion was made, seconded and voted that the minutes of the April 24, 1968 meeting of the House as submitted by the Secretary be approved.

Report of the Secretary

The President noted that the report of the Secretary was included in the handbook for the meeting. He reviewed some of the items listed in the report.

Action: A motion was made, seconded and voted that the report of the Secretary and the actions noted therein, as submitted, be approved and placed on record.

Reports of Committees

The President requested that the House change the listed agenda order of business and proceed to the reports of Committees.

Action: On separate motions the reports submitted in the handbook for the meeting by the Chairmen of the Committees noted below were approved and placed on record.

Child-School Health
Industrial Health
Mediation
Medical Aspects of Sports
Nursing
Perinatal Mortality
Pollution
Scientific Work and Annual Meeting
Social Welfare
Workmen's Compensation

Diabetes Committee

Dr. Henry F. Izeman, Chairman of the Diabetes Committee, read the report of his committee, copy of which is made part of the official record of the meeting.

Action: A motion was made, seconded and voted that the report of the Diabetes Committee, as submitted, be approved.

Highway Safety Committee

Dr. Joseph Caruolo, Chairman of the Highway Safety Committee, gave an oral report, stating that the committee hoped to initiate jointly with the Committee on Alcoholism of the Society a campaign to combat the problem of alcoholism and traffic accidents. He commented on the rising highway mortality rate. The subject was discussed by the members of the House.

Medical Economics Committee

Dr. John Turner, II, Chairman of the Medical Economics Committee noted that the report of his committee was included in the handbook for the meeting. He submitted two amendments as follows:

In the third paragraph the word "level" to be inserted between the words "renewable premium," and in the fourth paragraph the word "filling" be changed to "fulfilling."

(Continued on Page 700)

THE EARLY SYMPTOMS OF OSTEOPOROSIS

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68-207

HOUSE OF DELEGATES

(Continued from Page 698)

He discussed the development of the new disability plan proposed by the committee, and he stated every effort would be made to protect those members presently covered under the Society's program in the transfer of their enrollment to the new one.

Action: A motion was made, seconded and voted that the report of the Medical Economics Committee, as amended, be approved and placed on record.

Medico-Legal Committee

Dr. Nathan Chaset, Chairman of the Medico-Legal Committee, gave a brief oral report citing the fine liaison that has been established with the Rhode Island Bar Association to resolve mutual problems involving physicians and lawyers.

Social Welfare Committee

Dr. Peter Mathieu, Chairman of the Social Welfare Committee, gave a supplemental oral report in which he urged that when members file bills for services rendered to welfare beneficiaries a carbon copy be retained so that if payment is not paid timely the claim may be checked with the Medical Department of the State Welfare Agency. He also urged that physicians mark clearly on the claim form "First Visit" when the visit by the patient is the first to that particular physician, as often the paient may have visited another physician and in checking the claim the Agency might interpret the visit as a "second" one.

Public Laws Committee

Dr. Stephen Hoye, Secretary, read a report filed by the Chairman of the Committee on Public Laws subsequent to the publishing of the Delegates Handbook.

Action: A motion was made, seconded and voted that the report of the Committee on Public Laws, as submitted, be approved and placed on file.

Report of the Treasurer

Dr. John A. Dillon reviewed highlights of his report as published in the handbook for the meeting.

Action: A motion was made, seconded and voted that the report of the Treasurer, and the actions noted therein, be approved.

R.I. Group Health Association

The President gave an oral report of developments in the planning for the R.I. Group Health Association as given to the Council by Dr. Harry E. Darrah, Medical Director of the Association, and as the result of a meeting of representatives of the Society with Dr. Galetti, Chairman of the Department of Medical Sciences at Brown University. He reported on the tentative guidelines proposed by the Brown University department for the organization and operation of a Community Health Center, such as proposed by the Group Health Association, and he noted that the potential problems for private medical practice in the state had been presented by the Society's delegation, and that the Society strongly maintained the right of free choice of physician for all citizens.

Doctor Cunningham stated that his request for representation of the Society at future meetings of the Broown University department in conferences with the Group Health Association had the support of Doctor Galetti, who promised to request the conferees to include such representation.

Education of the Public on Free Choice

Members of the House discussed the advisability of a public relations program to educate the general public on the importance of free choice of physician to preserve patient-physician relationships in the interest of the best possible medical service. It was noted by members that the increasing development of tax supported "third party" involvements in health care programs tend to impair the vital patient-physician relationship, and that the Society should seek to counteract the misunderstandings that may prevail in the community regarding free choice.

Action: A motion was made, seconded and voted that the President name a committee to report to the House as soon as possible on a public educational program on the importance of the free choice of physician for every citizen, and that necessary public relations counsel be secured, as necessary, to draft a suggested program for the consideration of the House.

Recommendations of the Council

The President noted that recommendations of Council were included in the handbook for the meeting. Action was taken as follows:

1. *Benevolence Fund*

   A motion was made, seconded and voted that Dr. Alfred L. Potter be named for a three year term (until 1971) to succeed himself as a memof the Board of Trustees of the Benevolence Fund.

2. *Annual Dues*

   A motion was made, seconded and voted that the annual dues for 1969 for active members of the Society in practice more than one year be $80, and for members in their first year of practice, $40.

3. *Delegates to the AMA*

   A motion was made, seconded and voted that Dr. Edmund T. Hackman, of Warwick, be elected as Delegate, and Dr. Seebert J. Goldowsky, of Providence, be elected as Alternate Delegate, to the American Medical Association for the term January 1, 1969 through December 31, 1970.

(Continued on Page 701)

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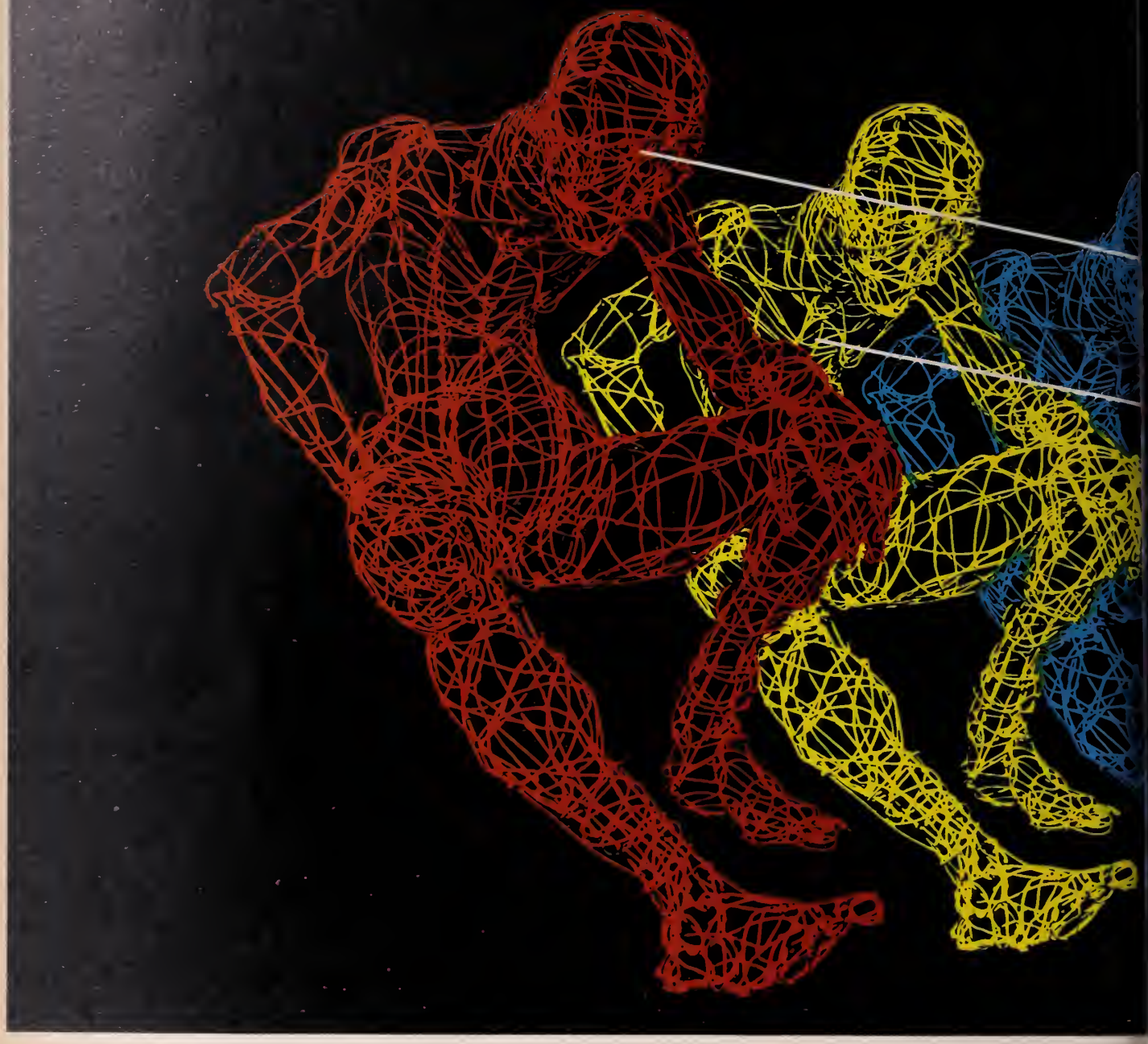
The *prolonged* acceptance of Mylanta was recently confirmed in 87.5% of 104 patients—after a total of 20,459 documented days of therapy.* *Danhof, I. E.: Report on file.

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Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150 mg.
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(The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	
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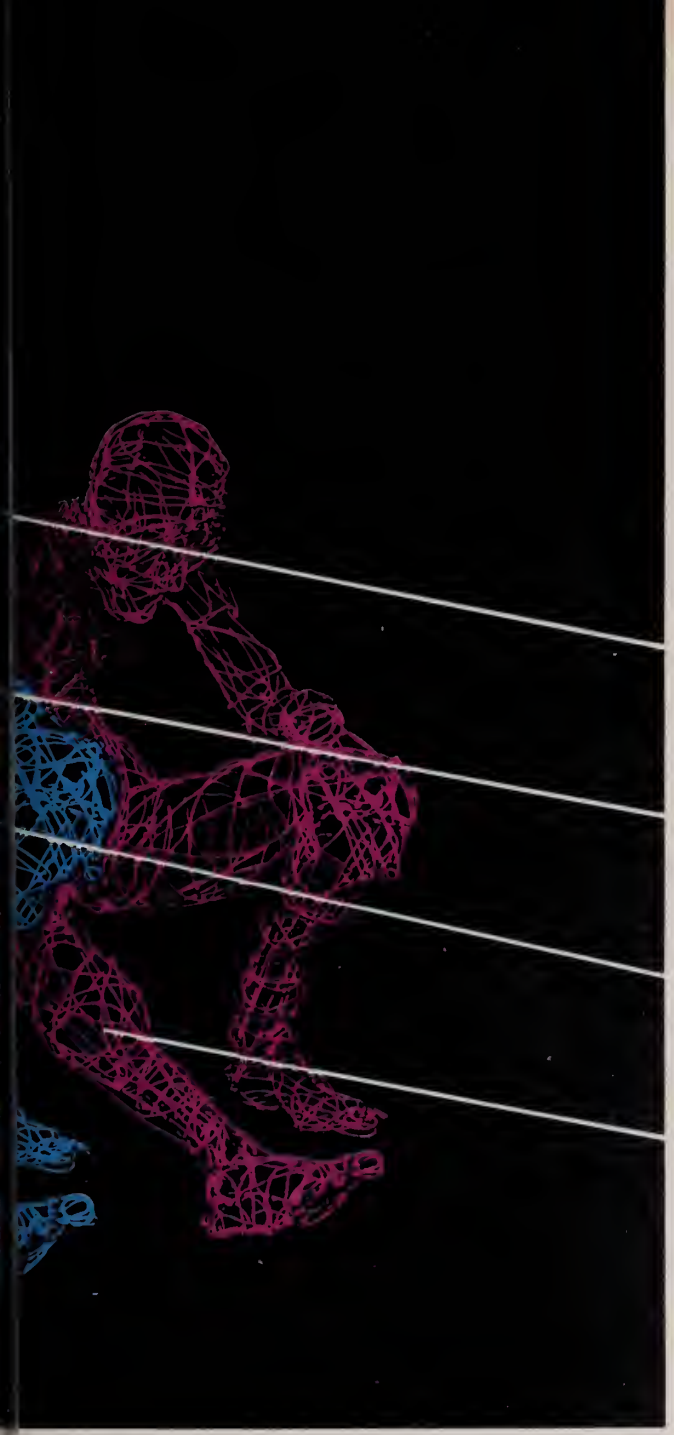
Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

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Precautions: Anemia is a manifestation that requires appropriate investigation to determine its cause or causes.

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inical and laboratory studies are considered essential and are commended.

dverse Reactions: In rare instances, iron in therapeutic doses oduces gastro-intestinal reactions, such as diarrhea or consti-ıtion. Reducing the dose and administering it with meals will inimize these effects.

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›sage: One Pulvule twice a day. (Two Pulvules daily produce a ındard response in the average uncomplicated case of perni-›us anemia.)

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Neo-Synephrine® (brand of phenylephrine) HCl 0.5 per cent, the major component, virtually synonymous with fast, efficient but gentle nasal vasoconstriction.

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HOUSE OF DELEGATES

(Continued from Page 700)

4. *Speaker and Vice Speaker*

A motion was made, seconded and voted that Dr. Orland F. Smith of Pawtucket, be elected Speaker of the House of Delegates, and Dr. Freeman B. Agnelli of Westerly, be elected as Vice Speaker of the House, both to serve until the annual elections by the House in April, 1969.

Doctor Cunningham named Drs. Stanley Davies and Alton Paull as a committee to escort Doctor Smith to the rostrum to preside over the meeting.

The Physicians Service Program

Dr. Robert C. Hayes of Pawtucket discussed his concern with the failure of Physicians Service to inform members of the profession timely regarding rate increases, rate filings, public hearings regarding rates, and the proper method for periodic requests of changes by physicians in their individual fee profile for some or all of their professional services. He called upon the Society to accept a greater responsibility regarding the economic issues faced by the members under the Physicians Service programs.

Doctor Arnold Porter discussed the mechanisms developed by the Physicians Service Corporation through the Board of Directors, the Professional Advisory Committee, and the Claims Committee whereby rate changes and changes in benefits are evolved in cooperation with the administrative staff.

The subject was discussed by many members of the House.

Action: A motion was made, seconded and voted that the Society notify all members of the Society reegarding the date of filing rate changes, of public hearings, and of the proper method for periodic requests of changes in their individual fee profiles as established by Physicians Service for some or all of the professional services each performs.

Doctor G. A. Motta discussed the matter of duplicate coverage under the existing contract offered subscribers to Physicians Service. He noted that the contract provided for payment up to the aggregate of coverages but the Plan frequently allows only a stated amount that is often under the aggregate which represents the physicians fee for service rendered. He moved as follow:

That the House of Delegates request the Corporation of Physicians Service to rule that until such time as the provision for payment of usual and customary charges is inserted in the subscriber's contract, the aggregate payment (to be no more than the summation of all contracts owned by the subscriber) as provided in Part I, Section G of the subscriber's contract be paid to the attending physician.

The motion was seconded and voted.

Adjournment

The meeting was adjourned at 10:47 p.m.

Respectfully submitted,
STEPHEN J. HOYE, M.D.
Secretary

REPORT OF THE SECRETARY

The following summary is submitted relative to major actions taken by the Council, and by Officers of the Society, since the April meeting of the House of Delegates:

1. *Appointments*

The Council has approved of the appointments made by the President, as follows:

Mediation Committee: Dr. Elihu S. Saklad to complete the unexpired term of the late Dr. Earl F. Kelly.

Dr. David R. Hallman for a full term to replace Dr. Lawrence A. Martineau.

Council of the N.E. State Medical Societies: For a one year term: Drs. F. B. Agnelli, John J. Cunningham, Seebert J. Goldowsky, John C. Ham, Stanley D. Simon, and John E. Farrell.

State Health Services Council: Nominees submitted to the Governor for consideration as Society reprensentatives on a 17-member Health Service Council established under legislation enacted this year relative to hospital licensure: Drs. Frank Merlino and Edwin Loverieng.

(Continued on next page)



Trustees-at-Large of the Medical Library (To serve in 1969): Dr. Jeannette E. Vidal.

Medical Examiner Commission. As designee of the President of the Society: Dr. E. H. Dahlquist.

2. *Assignments to Meetings as Society Representatives:*

Regional Meeting on Health Care of Children. Auspices of the American Academy of Pediatrics. At Swampscott, Mass. Sept. 28-29: Chairman of Child-School Health Committee, or his designee from Committee.

4th National Congress on Quackery. Auspices of AMA. At Chicago, Oct. 2-3: John E. Farrell, Executive Secretary.

Biennial Legal Conference for Attorneys and Society Executives. Auspices of the AMA. At Chicago, Oct. 4: Charles P. Williamson, Esq., Legal Counsel, and John E. Farrell, Executive Secretary.

2nd National Congress on Medical Ethics. Auspices of AMA. At Chicago, Oct. 5-6: Dr. Francis B. Sargent and John E. Farrell, Executive Secretary.

AMA Field Service Division's Regional Conference for Medical Executives: At New York, Oct. 15-16: John E. Farrell, Executive Secretary.

AMA Congress on Industrial Health. At New York, Oct. 5: Dr. Robert P. Sarni, Chairman of the Committee on Industrial Health.

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Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in 5's and 25's.

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Regional Conference on Health Care Costs. Auspices of the Federal Department of Health, Education and Welfare. At Boston, November 1 and 2: Drs. John J. Cunningham, Stanley D. Simon, Richard P. Sexton, Peter Mathieu, and John E. Farrell.

Regional Meeting on Medicine and Religion. Auspices of the AMA. At New York, March 8, 1969. Chairman of Committee on Medicine and Religion, or his designee.

3. *Special Study Committees*

The Council approved of the action of the President in requesting the Committee on Maternal Health and the Committee on Perinatal Mortality to report to the Society their joint findings of maternal and child health care in Rhode Island

The Council also approved the appointment by the President of a committee to report on organ transplants, submitting a possible "position paper" for consideration by the Society at the January session of the House of Delegates. The committee consists of Drs. Lester L. Vargas, Chairman, F. A. Simeone, Leland W. Jones, Richard P. Sexton, Mario G. Baldini, and Paul Calabresi.

4. The Council approved of the action of the President in the following matters:
   a) His endorsement of a letter over his signature for information for the State Department of Education regarding curriculum emphasis for the training of young men and women in Rhode Island for careers in the health and allied fields.
   b) Co-sponsorship of the Society with the State Department of Health for a survey on the cigarette smoking habits of physicians.
   c) His report on a regional Conference on Heart, Stroke and Cancer held on July 9, 1968. (See Appendix A.)
5. Authorization was given to the President to nominate a member of the Society to the Governor to serve as a Trustee for the regional Heart, Stroke and Cancer Program to replace Dr. H. E. Darrah who asks to be relieved of the assignment.
6. The Council authorized the President to name a committee to consider any requests for funds from the Medical Purpose Fund of the R.I. Foundation established at the time the End Polio Fund was turned over to the Foundation.
7. The Secretary was requested to convey the best wishes of the Council to immediate past president, Dr. Stanley D. Davies, who is convalescing from illness.
8. The Council approved a report from the Treasurer relative to the completion of a profes-

sional audit of the Society's funds by Ward, Fisher & Company; the dropping of four members for non-payment of 1968 dues and the reinstatement of three members who paid their dues subsequent to May 1; the transfer of $4,000 from the savings account to the general operating fund of the Society; the acceptance of a bequest of 123 valuable books from the late Dr. Madelaine R. Brown of Cambridge, Mass.; the receipt of a $5,279 grant for the Library under the Federal Medical Library Resource Grant act; an appraisal of the agency account, and of one change of investment; and a suggested budget for 1969, with recommendation that annual dues be $80, except for members in the first year of practice for whom the assessment would be $40.

9. Approval was given of a slate of nominees for Delegate and Alternate Delegate to the AMA, and for Speaker and Vice Speaker of the House of Delegates.
10. Referred to the Committee on the Future of the Private Practice of Medicine recommendations by the President and President-Elect based on their report of a meeting of State Medical Society Officers held in Chicago in August.
11. Received report of developments in the plans for the Group Health Association and possible affiliation with Brown University, and requested that the President of the Society meet with Brown medical faculty representatives and inform them of the Society's interest in planning stages of program.
12. Approved of two resolutions relating to the dispensing of drugs as adopted by the R.I. Pharmaceutical Association at its annual meeting.

STEPHEN J. HOYE, M.D.
Secretary

REPORT OF THE TREASURER

I report to the House at this meeting on the following matters:

1. *Agency Account*

The most recent appraisal of the invested funds of the Society is submitted as of July 31, 1968. One change in investment was approved by the Council at its recent meeting upon recommendation of the Trust Department of the Industrial National Bank. I am informed by the Trust Department that no other changes in our account are recommended at this time.

2. *Transfer From Savings Account*

With the approval of the Council, $4,000 in accrued interest in the special savings account for the group Blue Cross-Physicians Service program for the membership has been transferred to the

(Continued on next page)

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general operating account of the Society as partial compensation to the Society for the work involved in administering this program.

3. *Bequest From the late Madelaine R. Brown, M.D.*

The late Dr. Madeline R. Brown, of Cambridge, bequeathed her collection of medical books to the Library. There are 123 books — 76 new titles, 27 different editions of titles already on our shelves, and 23 duplicates — but almost all of the collection are in the rare book category or facsimile editions of rare books. The collection is considered the most valuable gift of books that the Library has received since the days of Doctor Hershey.

The late Doctor Brown was a Providence native, a graduate of Johns Hopkins, and she practiced in the specialty of neurology in the Boston area and was a professor of neurology at Harvard.

4. *Medical Library Resources Grant*

On October 23, 1967, the Society applied for a Medical Library Resource Grant of $6,000 for the purpose of microfilming periodicals and for the purchase of a microfilm reader-printer. On June 27, 1968, the National Library of Medicine notified us that we had been awarded $5,279. Amounts of grants are computed on the basis of annual operating expenses of the library concerned.

The microfilming is being done by Graphic Microfilm of New England, Waltham, Massachusetts. We are also purchasing equipment through them and buying a 3M reader-printer, a properly humidified cabinet for the film, and supplies.

The periodicals to be filmed are mostly state medical journals which have been taking up needed space and, as they are unbound, they have been deteriorating. They aren't used frequently but, as they are indexed in the various reference sources, are subject to call and can't be discarded. Microfilming seemed to be the answer to the problem of preservation and will give us space to be the answer to the problem of preservation and will give us space for other material. We shall offer the discarded material to other medical libraries and, if no one wishes it, dispose of it as paper. It has no sale value.

The special grant has been paid to the Society and has been deposited in the general operating account, to be reserved for the purposes for which granted.

5. *Budget for* 1969

In accordance with the bylaw instructions I submit a proposed operating budget for 1969 which would allocate $3,000 to the Benevolence Fund and $3,000 to the Medical Journal in the event the latter faces financial problems next year. Currently the Journal is operating in the black, and it may not require the complete appropriation in 1968; this question will be resolved before the end of the year.

The Benevolence Fund has not made a direct appeal for funds for three years, and it is currently using its surplus, which is diminishing each year, and it relies on an appropriation from the Society. In 1967 we appropriated $3,000, and the same amount will be appropriated for 1968.

We finished last year with a cash reserve in the general operating account of $15,647, and I believe that we will add appreciably to that reserve by the end of this year.

(NOTE: The complete appraisal of Invested funds and supplementary data submitted with this report is available for review by any member at the Executive Office.)

JOHN A. DILLON, M.D.
Treasurer

CHILD-SCHOOL HEALTH COMMITTEE

The Child-School Health Committee has under consideration several important issues upon which it will make study reports for future meetings of the House of Delegates. Briefly, these issues concern:

1. *The Rhode Island School Health Education Study*

A summary report of a research project undertaken by the State Department of Education has just been released. It points out clearly some of the major problems in the health education programs in our schools, and your Committee hopes to review the report and recommend the role that the Society may take in resolving some of the issues that have been raised.

2. *Delivery of Health Care to Children*

On September 28-29 the American Academy of Pediatrics will condut a regional conference at Swampscott, Massachusetts, to develop a two-year study which will seek to examine and interpret the present status of the delivery of health care to children and the important forces influencing it, to develop a forecast of the future needs in the area of child health care, and to prepare a report on the entire issue for the benefit of the public and the profession. Our Committee will have at least five of its members in attendance at this conference, and we are hopeful that we may gain information that will assist us in our work here in Rhode Island.

3. The Committee has established a sub-committee of six members to advise the Department of Education, and one meeting has already been held with officials of the Department.

4. *Pre-School Hearing Program*

The pre-school hearing program initiated by the Minnesota State Medical Association, and publicized this year by an article in READER'S DIGEST, has received attention by your Committee. The feasibility of the project will continue to be explored in the coming weeks, since the Committee

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is interested in developing some program to check the hearing of children in kindergarten, thereby closing the gap in the examination period from the one given first to the child as an infant and secondly upon enrollment at a school.

WILSON F. UTTER, M.D.
Chairman

DIABETES COMMITTEE

The annual Diabetic Fair co-sponsored by the Society and the Division of Chronic Diseases, Rhode Island Department of Health, will be held this year on Wednesday, October 9, 1968, from 9:00 a.m. to 7:00 p.m. at the Cranston Street Armory. The Chairman of the Fair is Doctor Jean Maynard. Doctor Maynard is a member of the Society and is also Chief of the above State Health Division.

The present Chairman and Doctor William Reeves, Chairman of the Committee last year, are participating in a liaison committee with the Division of Chronic Diseases called the Diabetes Education Committee. The purpose of this committee is to hold Diabetes Education Forums in the various parts of the state in an effort to increase knowledge about diabetes.

Participants in the Forum include physicians both local and from this Committee and dieticians and nurses from the State Health Department. A Diabetes Education Forum was held on May 16, 1968, at the Miriam Hospital with 142 people in attendance. Another Forum is scheduled for November 14, 1968, at the Woonsocket Hospital.

HENRY F. IZEMAN, M.D.
Chairman

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INDUSTRIAL HEALTH COMMITTEE

During the year the Industrial Health Committee of the Rhode Island Medical Society met with representatives of the State nursing associations and the State Health Department and drafted standing orders for nurses and first aiders in industry. These standing orders, patterned after those developed by the American Medical Association, were published in the Rhode Island Medical Journal after their adoption by the Society's House of Delegates.

The Committee also introduced in the General Assembly legislation to permit a nurse, under written or telephone orders, to be permitted to administer a drug in the event of an industrial accident. The Rhode Island statute in this respect is very restrictive and it works to the disadvantage of the injured worker. The legislation passed the House, but not the State Senate. The Committee will seek full passage in 1969.

ROBERT P. SARNI, M.D.
Chairman

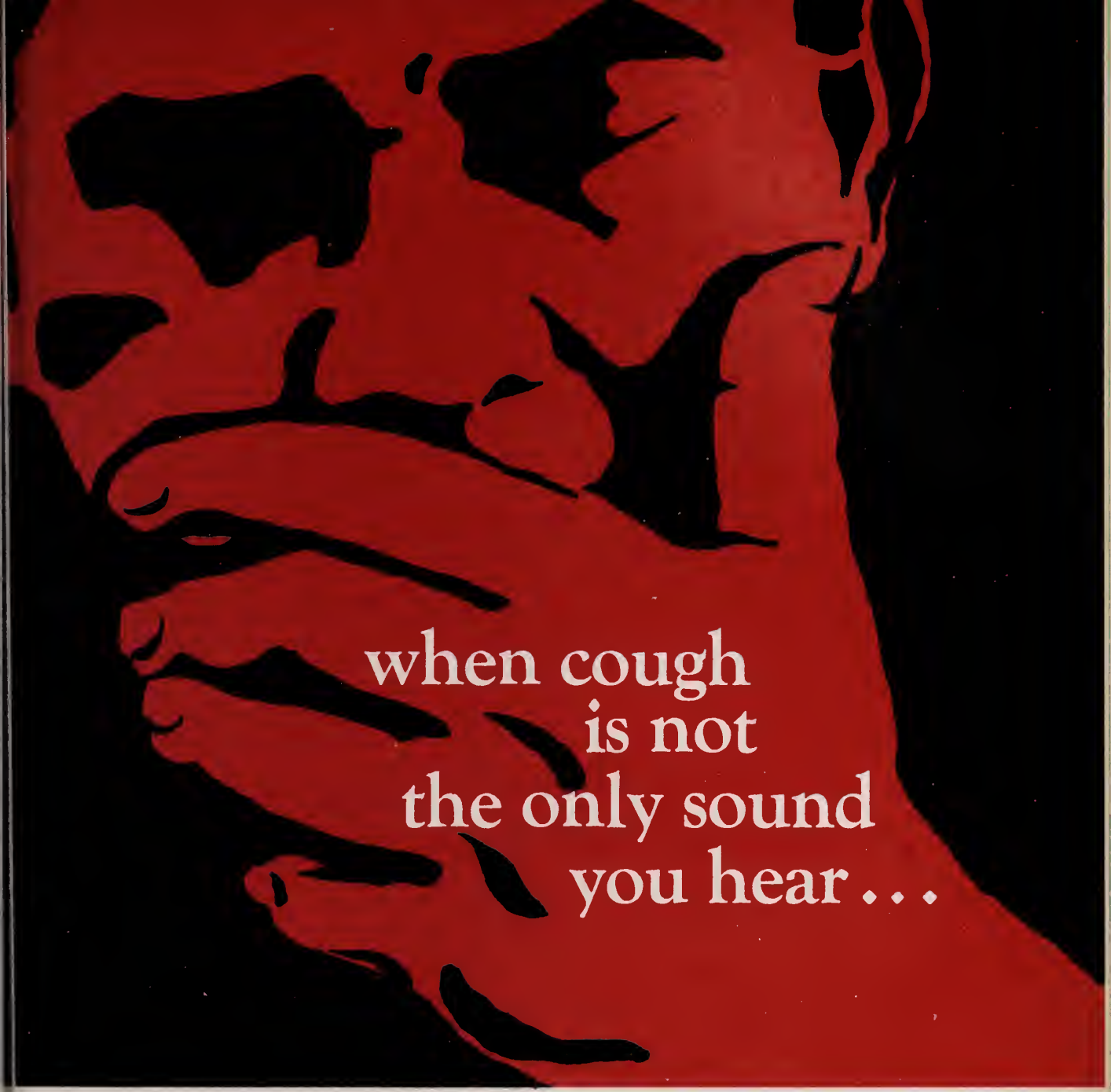
COMMITTEE ON THE MEDICAL ASPECTS OF SPORTS

The Committee on the Medical Aspects of Sports of the Rhode Island Medical Society, in conjunction with the Department of Athletics of the University of Rhode Island, held its seventh National Conference on The Medical Aspects of Sports at the University of Rhode Island on August 15, and 16, 1968.

I am extremely happy to report to you that the conference was a huge success. Although we advertise the Conference only in the Eastern states, registrants from nineteen diffent states attended the Conference. The total registration of the Conference was 184 with 154 paid registrants and the remainder was made up of interns and residents who were admitted free of charge. The highlights of the Conference were talks given by Dr. Martin Blazina of the University of California, Department of Orthapedic Surgery as well as Dr. Royer Collins of Scott-White Clinic of Temple, Texas; by Robert Gunn, Head Trainer of Lamar Tech in Beaumont, Texas; by Dr. John Duff of Danvers, Massachusetts. Dr. Daniel Hanley, head U.S. Olympic Team physician gave a very excellent talk on The Role of Women in Sports. The Conference was so well attended that we have decided to conduct it again next year.

A. A. SAVASTANO, M.D.
Chairman

(Continued on Page 707)



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Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity* reactions—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

Upon adverse reaction, stop medication and treat appropriately.

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HOUSE OF DELEGATES

(Continued from Page 706)

MEDIATION COMMITTEE

The Mediation Committee has had only three meetings since January 1st. The decrease is very gratifying. Our experience in this phase of professional liability is better than that of the country as a whole as evidenced by a recent publication in the Rhode Island Medical Journal. The article showed the national situation to be progressively less favorable.

Locally your Committee has been more concerned with complaints about fees than with professional liability. The adjustment to inflation is painful and often misunderstood by patients.

There has also been an alarming increase in accusations by patients alleging neglect and indifference by doctors and absolute rudeness from doctors' secretaries. Your Committee can usually explain these situations to the patients' satisfaction.

FRANCIS B. SARGENT, M.D.
Chairman

POLLUTION CONTROL COMMITTEE

The Pollution Control Committee Chairman spent an elucidating and somewhat depressing field trip to the various open dumps throughout the State in May of this year.

The combined solid, water, and air pollution in many of our communities is truly a discouraging commentary on our unwillingness to face this increasing menace to our neighbors, our families, and ourselves.

A series of thought-provoking pictures and comments of pollution in our State is tentatively planned for the Rhode Island Medical Journal, and the aid of the Medical Society Auxiliary and several of the community organizations will urgently be sought before even a dent can be made in this dismal picture.

GEORGE K. BOYD, M.D.
Chairman

MEDICAL ECONOMICS COMMITTEE

The Medical Economics Committee has held three meetings during the summer, each concerned with disability insurance for the membership.

The problem that exists is that group insurance rates for disability protection result in an overcharge for the younger members to prevent a higher rate for the older. Such programs, therefore, fail to attract younger men. Younger men often purchase better protection at little or no increase cost over the group program. The group program thus insures the older members largely. (Ninety-eight per cent of those enrolled in the Rhode Island Medical Society group program are fifty years or older.) Because the older members will have a higher number of impairments, the insurer may either increase the premium or cancel the program.

It is the Medical Economics Committee's opinion that a non-cancellable, guaranteed renewable level premium program is proper for the membership.

Underwriters National Assurance Company of Chicago, Illinois, has developed a disability income policiy for fulfilling these criteria. Basically this is an individual policy which has been developed for the members of the Rhode Island Medical Society.

Underwriters National anticipates solicitation of the membership before January 1, 1969. Policy holders in the currently endorsed plan will be refunded on a pro-rata basis. Underwriters National has agreed to cover those policy holders not reached by January 1, 1969, for a definite period.

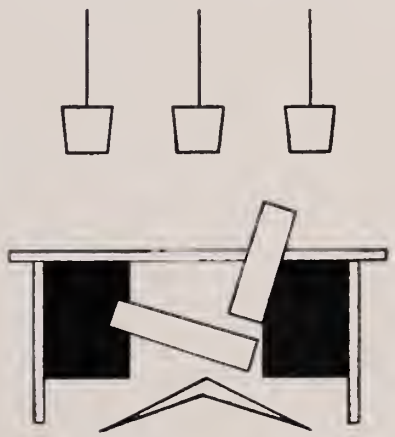
The Medical Economics Committee asks your endorsement for the development of this new disability program.

JOHN TURNER, II, M.D.
Chairman

COMMITTEE ON NURSING

The Liaison Committee on Nursing of the Rhode Island Medical Society has held several meetings during the past months. The Committee has contacted the superintendents and chiefs of medical staffs at all the hospitals in the state relative to the holding of a "Nursing Day" on which public attention would be directed to the importance of

(Continued on next page)

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the nursing profession, and programs would be instituted to encourage young girls to seek a career in nursing.

The Committee has in mind the possibility of a "Nurse Of The Year Award" to be awarded to an outstanding nominee submittee by hospitals and nursing agencies of the state. We also hope to have physicians and nurses address girls at the senior high schools throughout the state on this special day, and to utilize the mass media of communications to promote nursing.

At this time the Committee hopes that such a nurse recruitment program, and "Nursing Day" may be held about the time of the Society's annual meeting. We have been assured cooperation by all nursing groups, and now we ask approval of the Society, and also an appropriation of up to $100 towards such special award as may be determined for the Society's award to the "Nurse Of The Year."

MAURICE ADELMAN, M.D.
Chairman

PERINATAL MORTALITY COMMITTEE

The Rhode Island Medical Society is collaborating with Brown University in a study of perinatal and infant mortality in the State of Rhode Island. The study will be financed by grant from the National Foundation (March of Dimes).

Such a study offers a unique opportunity for an exceptionally thorough and meaningful analysis because of the geographical compactness of the State, and the unusually effective cooperation and communication among hospitals, physicians, and Brown University.

Much of the data to be processed has already been obtained from birth and death registration forms from the Vital Statistics Division of the State Health Department. From that part of the study already in progress, however, it is evident that there are significant areas of incomplete information.

For this reason the Meedical Society is seeking the cooperation of hospitals and physicians throughout the State to acquire this needed information from hospital records, and occasionally physicians may be contacted for particular information.

Most of the data collecting will be performed by nurses with special research training and professional confidential handling of all information will be strictly observed.

Dr. Alex M. Burgess, Jr., of Brown University and the Rhode Island Medical Society with the Society's Perinatal Mortality Committee will be supervising the conduct of this study, and Professor Emeritus of Obstetrics at Cornell Medical School, Dr. Gordon Douglas, and Mr. Harmon

(Continued on Page 710)

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HOUSE OF DELEGATES

(Concluded from Page 708)

Jordan, Director of the Providence Lying-In Hospital are serving as consultants.

It is hoped that all hospitals and physicians will cooperate to assure the success of this important study.

BERTRAM H. BUXTON, JR., M.D.
Chairman

PUBLIC LAWS COMMITTEE

The activities of the committee on public laws has been limited to consideration of legislation before the Rhode Island General Assembly. In the August issue of the Rhode Island Medical Journal a summary report from the committee was published listing the health and welfare legislation enacted, or defeated, in the 1968 Session of the Assembly.

Mr. John Farrell and I attended a symposium in New York which was held at the City Squire Motel. The symposium was held by the American Medical Association and its purpose was to develop legislative task forces. In essence, the American Medical Association is attempting to set up a nationwide system whereby greater rapport is established between the local medical societies and the legislators.

In essence, here in Rhode Island we have used legislative task forces. We have in the past held joint dinner meetings with our legislators. Since our state is so small, we have always had the opportunity of approaching our legislators because they have been known to us. The problems are quite different in some of the larger states.

The necessity of maintaining channels of communications with our legislators is readily apparent. It is the opinion of the chairman that further efforts along this line should be encouraged by the House of Delegates.

ARMAND D. VERSACI, M.D.
Chairman

COMMITTEE ON SCIENTIFIC WORK AND ANNUAL MEETING

Arrangements for the Annual Meeting on May 6 and 7, 1969 are progressing exceptionally well. I am extremely happly to report to you that Dr. Denton Cooley of Houston, Texas, has accepted an invitation to be the Chapin Orator on May 6, 1969. The title of his talk will be, "The Immunology of Organ Transplants With Particular Reference to the Heart." We are indeed fortunate in securing a person of Dr. Cooley's stature and reputation to our Annual Scientific Assembly.

In addition to Dr. Cooley, Dr. Dwight L. Wilbur, President of the American Medical Association, has accepted, not only to bring the greetings of the American Medical Association but also to give a scientific talk.

In addition, Leona Baumgartner, M.D., who was unable to personally deliver the Chapin oration three years ago, has accepted an invitation to give a formal scientific talk. Dr. Baumgartner is presently Visiting Professor of Social Medicine at the Harvard Medical School.

Carl E. Wasmuth, M.D., of the Department of Anesthesiology of the Cleveland Clinic, has accepted an invitation to talk on the interesting subject, "When Is A Person Dead?".

We have invited one of the pediatricians from Columbia University to talk on the brand new specialty of Fetology.

We hope to have the entire program ready within the next four to six weeks.

* * *

WORKMEN'S COMPENSATION COMMITTEE

The Physicians and Carriers Workmen's Compensation Committee has met on three different occasions during the past six months with three different cases being studied and discussed. In each case, the Committee which consists of three physicians and three insurance company representatives felt that the statements which had been submitted by the physicians were fair and just and should, therefore, be honored by the insurance carriers.

A. A. SAVASTANO, M.D.
Chairman

SOCIAL WELFARE COMMITTEE

Title XIX Rhode Island medical vendor fee schedule for surgeons, assistant surgeons and anesthetists was revised upwards from the unrealistic PSI Plan A (2.86) to PSI Plan B (4.17) on July 1, 1968. The committee recognizes the support of the Social Welfare medical director, P. Joseph Pesare, M.D. in this effort. It notes the concurrence of the Rhode Island Department of Health and the Rhode State Board of Education.

The medical director of Public Assistance asks the physicians for their continued support of the medically indigent in Rhode Island. He acknowledges the need to improve areas of concern, especially with some aspects of the medical fee schedule of the program. The committee needs the cooperation of all the doctors in the Society, and asks each member to relate to the President of the Society, or to the executive Secretary, his specific ideas as regards the individual physician's participation in Medicaid. Your faith, your help, your guidance is a must if Medicaid is to be developed in a solid manner whereby the Title XIX consumer can procure his medical requirements in a manner of his own choosing through his own private physician, and in a fashion consistent with usual and customary compensation.

PETER L. MATHIEU, JR., M.D.
Chairman

THROUGH ...  ... *the Microscope*

VISITS TO DOCTORS FALL TO 4.3 PER PERSON ANNUALLY

The average American is making fewer visits to his physician — either in person or over the telephone — than he did 10 years ago, the Health Insurance Institute said recently.

During the 12-month period ending June 30, 1967, the U.S. National Health Survey found that Americans paid an estimated 831 million visits to physicans.

This means that on the average, an American made 4.3 visits to his physician during the year. Ten years earlier the figure stood at 4.7 visits per year.

(The National Health Center's definition of physicion "visit" includes any consultation with a physician — either in person or over the telephone — but excludes visits of physicians to their patients in the hospital.)

The survey indicated that women and older people visit physicians most often.

Maternity

While the rate for women tends to be high because of maternity care, an earlier National Health Survey study indicated that even when pregnancy-related care was excluded, women still conferred with physicians more than men.

Older persons, predictably, visit doctors most. Government figures show that on the average, a person 65 years or more visits a physician six times a year.

In contrast, youngsters under 15 have consultations with doctors less than four times annually.

Still, many persons have little need for a doctor.

According to the survey, about one individual in 25 had not gone to the doctor for five years or more prior to the study; one in three had not had a visit during the survey year; and one person in 100 had never consulted a physician.

Unlikely Event

While home calls have been diminishing in favor of office and clinic visits, the Institute pointed out that it is unlikely that home visits will ever entirely disappear.

Several reasons for the changing pattern of doctor-patient out-of-hospital meetings have been advanced by medical observers.

Among them are the increasing ease of mobility of the population, fewer general practitioners, the growing number of hospital outpatient facilities, particularly in rural areas, and the availability of sophisticated medical equipment in the doctor's office.

AEROSPACE FIRM STUDIES TRAFFIC DEATHS, INJURIES FROM IMPROPER HANDLING

Saving thousands of highway traffic victims from permanent disability or death due to improper emergency care is a challenge just handed the aerospace industry.

The United States Department of Transportation, Federal Highway Administration, has contracted North American Rockwell Corp. to study improved ways of removing, treating and transporting injured people who have been trapped in wrecked automobiles, it was announced recently.

The company will also develop operating guidelines for ambulance drivers and attendants, which the National Highway Safety Bureau will use in establishing national standards of practice. The material eventually will be included in training manuals for operating personnel.

Twenty-five per cent of the permanent physical disabilities suffered by auto accident victims could be avoided with proper emergency care, a report by the American College of Surgeons shows. Officials hope results of the Autonetics study can be used to substantially reduce that figure.

Projections by the United States Department of Health, Education and Welfare show approximately four million persons will be injured in accidents throughout the United States this year, underscoring the significance of the study.

The study will identify the information, skills and removal equipment, and rescue and ambulance personnel needed to provide the quickest, most efficient emergency medical care and transportation under a wide variety of conditions.

It will cover a full range of activities from the time an ambulance is dispatched until it arrives at the hospital, and include such items as first aid, resuscitation, extrication, special hazards, and patient comfort and handling techniques.

(Continued on next page)

HOSPITAL USE BY MEDICARE PATIENTS CONTINUES TO RISE

Use of the nation's hospitals by Medicare patients continues to increase, according to a report published by the American Hospital Association.

Statistics published in the Hospital Indicators section of HOSPITALS, Journal of the American Hospital Association, show that the number of persons 65 and older admitted to hospitals in July 1968 was 10.5 per cent greater than the number admitted in July 1967.

According to Hospital Indicators, there were 486,710 patients 65 and over admitted to hospitals last July, while the total number admitted in July 1967 was 440,334. In July 1966 — the first month of Medicare — total admissions to the over-65 group numbered 438,373.

Hospital Indicators, a monthly measurement of hospital utilization in the U.S., shows that total admissions of patients of all ages increased 3.5 per cent in July 1968 over the number admitted in July 1967. Patients were admitted at the rate of more than 77,000 a day in July.

The number of outpatient visits continued to climb — from 8,810,297 in July 1967 to 9,579,223 in July of this year. Expectations are that the number of such visits will continue to increase as the population focuses upon its hospitals as the centers of community health care.

Total expenses incurred by hospitals in serving both inpatients and outpatients increased by $48 million over the June total of $1.20 billion. The average total expense per patient day in July was $67.38, of which $42.79 represented payroll expense.

NEW TECHNIQUE EVOLVING FOR DETECTION OF RHEUMATOID ARTHRITIS

Photographs and "temperature maps" of infrared rays from arthritic joints may soon help physicians plot more effective treatment for victims of rheumatoid arthritis, the Health Services and Mental Health Administration reported recently.

In an Administration-supported research project now taking place at the Temple University School of Medicine in Philadelphia a heat-detecting instrument, the thermograph, is undergoing extensive evaluation as it measures and records the body-surface temperatures of a group of patients afflicted with rheumatoid arthritis.

Administration medical authorities believe that if thermography is found to compare with current evaluation techniques it will benefit physicians and reduce crippling in two essential ways: (1) It will allow physician-investigators to evaluate new and current treaments by plotting the subsequent progression or regression of the disease, and; (2) It will provide a means of detecting rheumatoid arthritis at its earliest possible stages, when crippling is most preventable.

The technique's relevance to rheumatology lies in the fact, long known to medical science, that isolated areas of inflammation emit more heat than surrounding, uninvolved regions. Rheumatoid arthritis is the result of inflammation in the joint lining (synovium).



POEM

Some day a dialogue will go as follows:

How are you? Not so good;
I would like to change a kidney.
I saw some in a store window.
No need to remove every two months, for cleaning, etc.

Are you happy with your heart?
In the past the slightest emotion
Acted like a cannon blast.
Now, a turn of a little wheel and I am all set.

What an appetite; my plastic stomach
digests everything.

Remember my dumb cousin?
Washing his brain had no effect,
But after the auto accident in which he ended up in a pile with the other driver, a famous physicist, the surgeon took a chance,
but, by mistake, the physicist's cortex was put in my cousin's head and vice versa.
The professor is now an imbecile,
and my cousin has actually obtained a college degree.

. . . Translated from: "Da un trapianto all'altro" by Ugo Piazza, M.D., dermatologist and poet of Rome, Italy, and a visitor in Providence some years ago. Submitted by Francesco Ronchese, M.D.

BRISTOL COUNTY MEDICAL SOCIETY

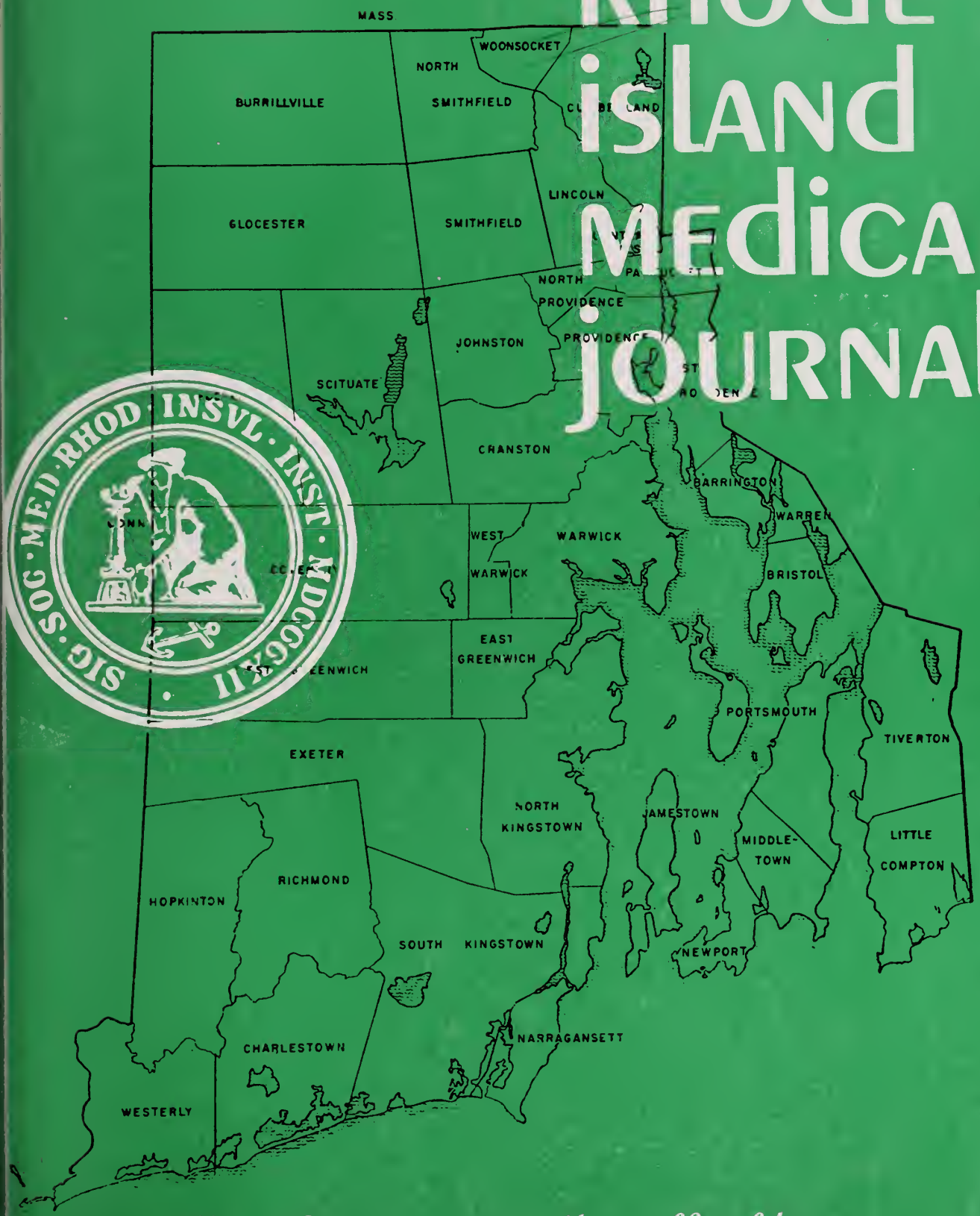
At a meeting of the Bristol County Medical Society held on October 15 Doctor Hubert Holdsworth was elected as President.

Other officers elected were as follows:

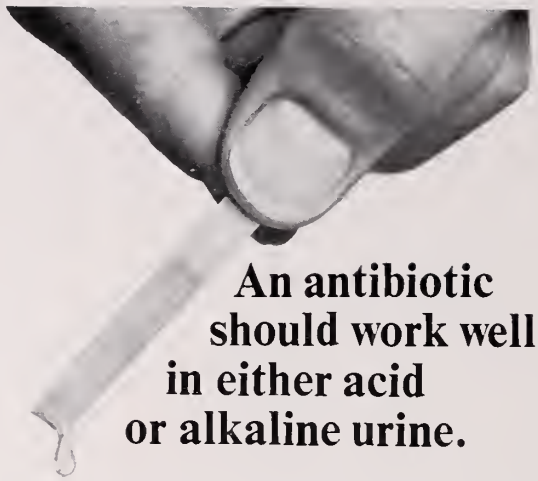
Doctor Victor P. Medeiros, Vice President
Doctor Fred Vohr, Secretary
Doctor Paul A. Botelho, Treasurer
Doctor, Daniel J. Dorman, Delegate to House of Delegates
Doctor Robert W. Drew. Councillor

VOL. LI, NO. 12 DECEMBER, 1968

Rhode Island Medical Journal



Merry Christmas and a Happy New Year



An antibiotic should work well in either acid or alkaline urine.

It isn't always necessary to adjust urinary pH in treating G.U. infections.

Not when the causative organism is a strain sensitive to DECLOMYCIN® Demethylchlortetracycline, as is often the case.

DECLOMYCIN remains stable and active in either acid or alkaline urine. So there's no need to acidify the urine to keep the antibiotic at work.

Why match the urine to the antibiotic...when you can match the antibiotic to the urine...by prescribing DECLOMYCIN. A b.i.d. dosage makes therapy convenient for your patient.

Effectiveness: DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines in infections caused by organisms sensitive to the tetracyclines.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning: In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions: Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects: Gastrointestinal system – anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin – maculopapular and erythematous rashes; a rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney – rise in BUN, apparently dose-related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions–urticaria, angioneurotic edema, anaphylaxis. Teeth – dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs, discontinue medication and institute appropriate therapy. Demethylchlortetracycline may form a stable calcium complex in any bone-forming tissue with no serious harmful effects reported thus far in humans.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; Tablets: film coated – 300 mg, 150 mg and 75 mg of demethylchlortetracycline HCl.

355-8

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DEMETHYLCHLORTETRACYCLINE

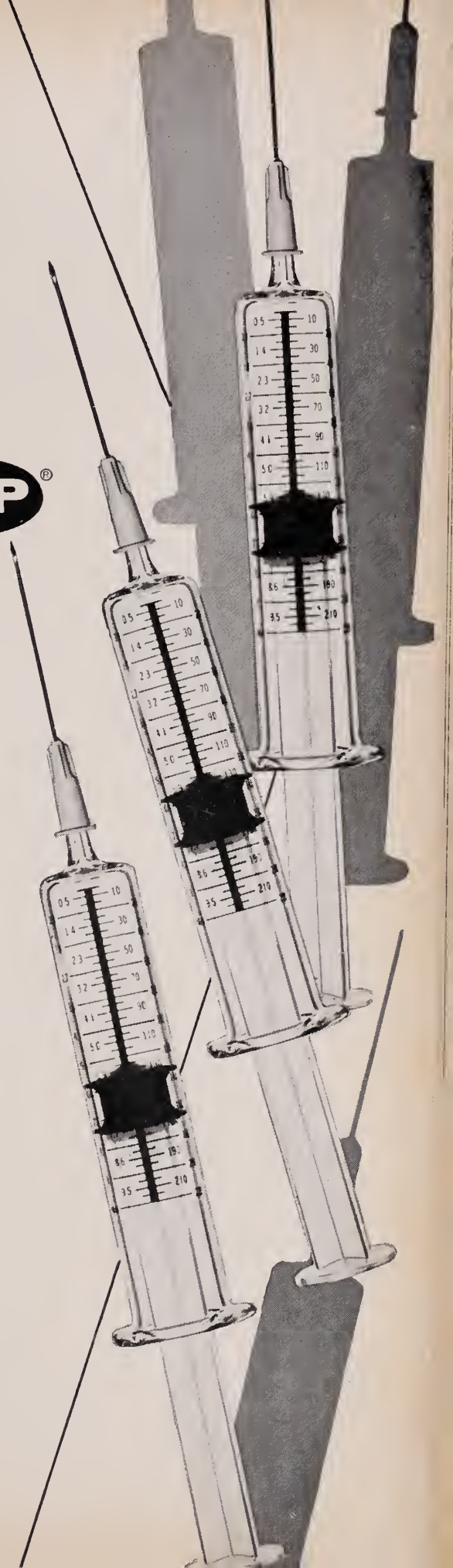
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ECONOMICAL

ATIENT-UNIT.

BSP, one of the more valuable single laboratory procedures for determining hepatic function, is now packaged in a complete individual patient-unit.

The BSP Disposable Unit contains a sterile syringe with the dosage schedule imprinted on the barrel, a sterile needle, alcohol swab and a 7.5 ml. or 10 ml. size ampule of terminally sterilized BSP solution. Each unit contains complete directions for use, precautions and contraindications.

This all-inclusive disposable put-up lessens the chance of cross-infection and saves time and labor — the most costly commodities.

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W&D (BSP03)

BALTIMORE, MARYLAND 21201

Speaking of a Growth Security

Your participation in Rhode Island Physicians Service has really paid dividends over the past year . . . and the future looks even better. The "portfolio" of benefits has been expanded . . . subscriber security is up sharply . . . and so are payments and services to physicians.

This Year: Total Physicians Service enrollment is up by 20,000. More than 70% of our members now have Plan B. Major Medical enrollment has doubled in 12 months.

Benefits are greatly improved, and will be further improved January 1, 1969. Physicians Service now covers X-rays, radiotherapy, and radioactive isotopic therapy in full . . . in the hospital or your office. For hospitalized patients, EEG's and EKG's are covered in full. Maternity allowances are better than last year.

What's more, we plan to add benefits for maternity anesthesia on January 1. Payments for in-hospital medical care will become more adequate. Intensive medical care and consultations will be added. And, a number of additional "minor" procedures will go on the benefit schedule.

And, incidentally, for your over-65 patients, the history of our Plan 65 Medicare gap-filler has been one of steady improvement.

Next Year: In addition to the January 1 improvements in current contracts, Physicians Service is actively studying coverage of other diagnostic services, which may be added in 1969. But far more importantly, we expect to be on the market well before mid-1969 with a full-payment, prevailing fee surgical/medical contract . . . a timely and welcome addition for both patient and physician alike. This brand new contract will be truly comprehensive in scope, and flexible enough to meet demands from every segment of the market.

Cases And Dollars Paid Are Up

The growth picture in benefit scope is clear. But what about payments for member's care?

In the first nine months of 1968, compared to the same period for '67:

- The number of claims paid for Physicians Service members (excluding Medicare) is *up* by 55,000 . . . and dollars paid is *up* by almost $1 million.
- Claims paid through Physicians Service for Medicare went *up* by 46,000 . . . and dollars paid for Medicare patients went *up* by $1.2 million.
- *Total* claims paid (both basic and Medicare) is *up* by 91,500 over the same period last year . . . and *total* payments for Physicians Service and Medicare patients is *up* by more than $2 million.

As you can see, the Physicians Service role in providing services to physicians and security to Rhode Islanders is clearly in a growth situation.



PHYSICIANS SERVICE
444 Westminster Mall
Telephone: 831-7300

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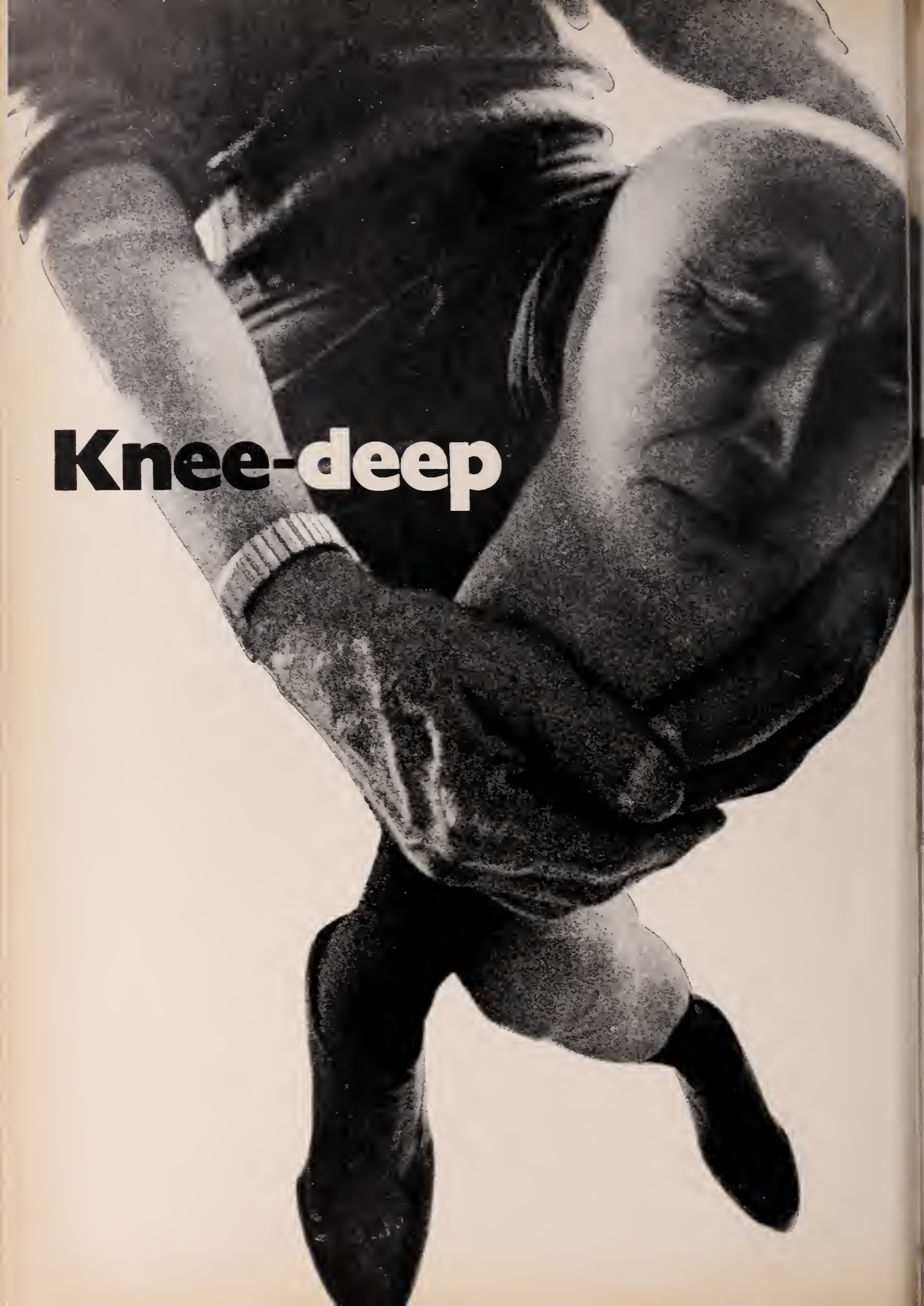
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Knee-deep

n osteoarthritic pain

If aspirin doesn't help, move in
h Tandearil.

The trial period is brief: 1 week.
one tablet q.i.d. at first. Tandearil
ually starts working within 3 to 4 days.
nen response occurs, as little as 1 or
ablets daily may hold back pain and
fness, and increase joint motion.

On the next page is a summary
adverse reactions, contraindications,
rning and precautions.

Tandearil.
It can help get his mind off his knee.

Please review full Prescribing Information carefully before prescribing.

For osteoarthritic knees, spines, shoulders, hips, etc.:

Tandearil®
oxyphenbutazone

dearil, oxyphenbutazone:
brief summary see next page.

Geigy

TA 8006



Tandearil®
oxyphenbutazone

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: This drug is an analog of phenylbutazone; sensitive patients may be cross-reactive. If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Persistent or severe dyspepsia may indicate peptic ulcer; perform upper gastrointestinal x-ray diagnostic tests if drug is continued. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with caution in the first trimester of pregnancy, and in patients with thyroid disease.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patients should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia), sudden weight gain (water retention), skin reactions, black or tarry stools or other evidence of intestinal hemorrhage occur. Make complete blood counts at weekly intervals during early therapy and at 2-week intervals thereafter. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The more common are nausea and edema. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension, the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately after meals or with milk to minimize gastric upset. Drug rash occasionally occurs. If it does, promptly discontinue the drug. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, Lyell's syndrome (toxic necrotizing epidermolysis), or a generalized allergic reaction similar to a serum sickness syndrome may occur and require permanent withdrawal of medication. Agranulocytosis can occur suddenly in spite of regular, repeated normal white counts. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, hypersensitivity angiitis, pericarditis and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: Initial: 3 to 6 tablets daily in divided doses. Usually unnecessary to exceed 4 tablets daily. A trial period of one week is considered adequate to determine the therapeutic effect of the drug. Maintenance: Effective level often achieved with 1 or 2 tablets daily, should not exceed 4 tablets daily.

In selecting appropriate dosage in any specific case, consideration should be given to the patient's weight, general health, age and any other factors influencing drug response.

Availability: Tan, round, sugar-coated tablets of 100 mg in bottles of 100 and 1000.

(B)R-46-800-A

For complete details, please see full Prescribing Information.

Geigy Pharmaceuticals
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THE END OF THE 90th

A Legislative Roundup for 1968 Prepared by the Council on Legislative Activities of the American Medical Association

The curtain rang down on the 90th Congress when both houses adopted resolutions formally adjourning the 1968 session. The action, on Monday, October 14, was taken just three weeks before the national elections.

For a time it appeared that neither house would or could take the formal action required to adjourn sine die. Neither could muster enough votes for the quorum necessary to take the adjournment action, and it appeared that house mavericks would keep them going in an attempt to force action on a T.V. debate bill.

The next Congress, the 91st, will convene on January 3, 1969. If present election trends continue, the makeup of the 91st Congress will be substantially different from that of its predecessor.

Last Minute Action: Before adjourning, Congress took final action on important health measures. Passed and sent to the President for signature were the regional medical programs extension bill (H.R. 15758), the radiation control proposal (H.R. 10790), and legislation to provide penalties for the possession of LSD (H.R. 14096). Left hanging was S. 3206, the water pollution bill, which was passed by both houses but not in the same form. Time ran out before the House and Senate could get to gether on an agreed version to be sent to the President.

Also awaiting signature was S. 4158, a bill to provide continuation pay for MD "critical specialists" in the military. The bill, passed by the House and Senate three days before adjournment, had been introduced simultaneously in both houses only days before.

Actions, in the field of health care, in the 90th Congress, were not particularly conspicuous. No criticism has been heard, however, in view of the staggering number of major health bills adopted by the preceding 89th Congress.

Of the 29,132 bills considered by the 90th Congress, 1,435 related to health care. The total number of health measures enacted into public law was a respectable 31. Most of these, however, provided for extensions and amendments to existing health programs.

CONGRESS IN REVIEW

The 90th Congress began its two year tenure at noon on Tuesday, January 10, 1967 with 246 Democrats and 187 Republicans being sworn into the House and 64 Democrats and 36 Republicans taking their seats in the Senate. Two Democratic seats were vacant in the House because of the death of Rep. John Fogarty (D) R.I. just hours before the opening gavel sounded, and by the refusal of the House to seat the controversial Adam Clayton Powell, the Representative of New York's 18th Congressional District. Compared with the previous Congress, the 89th, the Republicans had made a net gain of 47 seats in the House and 3 seats in the Senate.

A Slower Pace: As predicted, the 90th did not produce the enactment of such a proliferation of major social welfare legislation, compared with the 89th. In 1967-68, Congress instead of initiating a number of new programs, concerned itself with an examination of programs already under way.

Many reasons may be offered as to why the 90th Congress was less ambitious in the enactment of medically oriented welfare legislation. First, this was a more conservative Congress compared to its predecessor, the 89th. Second, 1967-68 found a great concern among the American people and the Congress with such problems as: Viet Nam; crime in the streets; the poor people's campaign; deterioration of our cities; civil rights; and the shrinking of the dollar.

A third reason was one which was predicted by most Washington observers. There were so many new programs inaugurated in previous years and so much obvious duplication and waste that there was a need to assimilate, consolidate, evaluate, and streamline these programs before any new ventures could be undertaken.

AMA'S TESTIMONY IN 90th CONGRESS

As with previous Congresses, the 90th found AMA witnesses appearing many times before Con-

(Continued on next page)

gressional Committees. In all, the AMA witnesses appeared on 12 occasions, and in addition, submitted 12 statements for the record. In total, the Association testified on 19 legislative subjects supporting 14, opposing 2, and providing informational testimony as to 3.

The following is a record of AMA's testimony in the 90th:

S. 260 Testimony on the Medical Restraint of Trade Act was presented to the Senate Judiciary Committee on March 1, 1967 by James Z. Appel, M.D., immediate past president of the AMA, and Bernard P. Harrison, Director of AMA's Legislative Department. Both witnesses opposed restriction on MD dispensing of drugs, ownership of pharmacies, etc.

S. 1432 Selective Service Act testimony before the Senate Armed Services Committee on April 13, 1967 and the House Armed Services Committee on May 3, 1967, was delivered by Albert H. Swichtenberg, M.D., who supported the bill in part and suggested certain amendments.

S. 1945 On August 1, 1967, Frank C. Coleman, M.D., presented AMA's support of S. 1945 to exempt blood banks from anti-trust laws. (Before the Senate Judiciary Committee.)

S. 780 Testimony on the Air Quality Act before the House Interstate and Foreign Commerce Committee on August 18, 1967, was given by James H. Sterner, M.D., who supported the bill, emphasizing continued need for local initiative for pollution control programs.

H.R. 12080 (H.R. 5710) On April 4, 1967, Charles L. Hudson, president of the AMA, offered the Association's support of H.R. 5710 in part and opposition of certain provisions before the House Ways and Means Committee. On August 28, 1967, the new president, Milford O. Rouse, M.D., delivered AMA's partial support of and suggested amendments to the Social Security Amendments of 1967 (H.R. 12080) before the Senate Finance Committee.

H.R. 14816 R. Lomax Wells, M.D., appeared before the House Education and Labor Committee on March 5, 1968, on the Occupational Safety and Health Act. Dr. Wells voiced AMA's partial support of the bill and suggested certain amendments.

S. 3095 Health Manpower Act testimony was presented before the Senate Labor and Public Welfare Committee on March 21, 1968, by William A. Sodeman, M.D., who stated AMA's support of the bill in part and offered certain amendments.

H.R. 15758 AMA testimony on a bill to extend the Regional Medical Programs and to provide for narcotic addict rehabilitation was given before the House Interstate and Foreign Commerce Committee on March 27, 1968 by Doctors Bland W. Cannon and Hery Brill, Both supported the bill with suggested amendments.

H.R. 15757 AMA testimony was again presented on the Health Manpower Act by Dr. William A. Sodeman, this time before the House Interstate and Foreign Commerce Committee on June 12, 1968. Dr. Sodeman restated AMA's support and suggested certain changes to the bill.

S. 2864 Appearing for the second time on the Occupational Health and Safety Act, Dr. R. Lomax Wells again voiced AMA's partial support of the bill and offered suggestive amendments before the Senate Labor and Public Welfare Committee on June 12, 1968.

The following is a listing of AMA's "statements for the record" to Congressional Committees:

S. 355 Legislative Branch Improvement Act, submitted to the House Rules Committee on March 27, 1967, stating AMA's partial support.

H.R. 6430 (S. 1099) Mental Retardation Amendments offered to the House Interstate and Foreign Commerce Committee on May 1, 1967, and again to the Senate Labor and Public Welfare Committee on October 11, 1967, both times stating the Association's partial support of the bill.

S. 780 AMA's comments on the Air Quality Act were submitted to the Senate Public Works

(Continued on Page 721)

HEALTH HAVENS
NURSING HOME
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In the complex picture of moderate to severe anxiety...



here is a new reason or prescribing Mellaril (Thioridazine HCl)

ffectiveness in ixed anxiety-depression

ng recognized for its usefulness in the atment of moderate to severe anxiety, ellaril is now also known to be effective ainst mixed anxiety-depression.

ten the symptoms of anxiety states are ficult to sort out—even with the most careful bing. The patient may manifest symptoms of tation, restlessness, insomnia, somatic nplaints. But what of the depression that may mixed in the total picture? It is reassuring know that Mellaril may be prescribed—with ng possibilities of success—when there is iety alone or a mixture of anxiety l depression.

Before prescribing or administering, see Sandoz literature for full product information, including adverse reactions reported with phenothiazines. The following is a brief precautionary statement.

Contraindications: Severe central nervous system depression, comatose states from any cause, hypertensive or hypotensive heart disease of extreme degree.

Warnings: Administer cautiously to patients who have previously exhibited a hypersensitivity reaction (e.g., blood dyscrasias, jaundice) to phenothiazines. Phenothiazines are capable of potentiating central nervous system depressants (e.g., anesthetics, opiates, alcohol, etc.) as well as atropine and phosphorus insecticides. During pregnancy, administer only when necessary.

Precautions: There have been infrequent reports of leukopenia and/or agranulocytosis and convulsive seizures. In epileptic patients, anticonvulsant medication should also be maintained. Pigmentary retinopathy may be avoided by remaining within the recommended limits of dosage. Administer cautiously to patients participating in activities requiring complete mental alertness (e.g., driving). Orthostatic hypotension is more common in females than in males. Do not use epinephrine in treating drug-induced hypotension. Daily doses in excess of 300 mg. should be used only in severe neuropsychiatric conditions.

Adverse Reactions: *Central Nervous System*—Drowsiness, especially with large doses, early in treatment; infrequently, pseudoparkinsonism and other extrapyramidal symptoms; nocturnal confusion, hyperactivity, lethargy, psychotic reactions, restlessness, and headache. *Autonomic Nervous System*—Dryness of mouth, blurred vision, constipation, nausea, vomiting, diarrhea, nasal stuffiness, and pallor. *Endocrine System*—Galactorrhea, breast engorgement, amenorrhea, inhibition of ejaculation, and peripheral edema. *Skin*—Dermatitis and skin eruptions of the urticarial type, photosensitivity. *Cardiovascular System*—Changes in the terminal portion of the electrocardiogram have been observed in some patients receiving the phenothiazine tranquilizers, including Mellaril (thioridazine hydrochloride). While there is no evidence at present that these changes are in any way precursors of any significant disturbance of cardiac rhythm, several sudden and unexpected deaths apparently due to cardiac arrest have occurred in patients previously showing electrocardiographic changes. The use of periodic electrocardiograms has been proposed but would appear to be of questionable value as a predictive device. *Other*—A single case described as parotid swelling.

Mellaril®
(Thioridazine HCl) 25 mg. t.i.d.

for moderate to severe anxiety and mixed anxiety-depression

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SANDOZ PHARMACEUTICALS, HANOVER, N. J. 68-169

Q. How much does the **anticostive*** **hematinic** cost?

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PERITINIC®

Hematinic with Vitamins and Fecal Softener

A tablet-a-day provides:

● Elemental Iron (as Ferrous Fumarate)	100 mg
● Dioctyl Sodium Sulfosuccinate (to counteract constipating effect of iron)	100 mg
Vitamin B_1	7.5 mg
Vitamin B_2	7.5 mg
Vitamin B_6	7.5 mg
Vitamin B_{12}	50 mcgm
Vitamin C	200 mg
Niacinamide	30 mg
Folic Acid	0.05 mg
Pantothenic Acid	15 mg

Bottles of 60

*

anticostive, *adj.* (*anti* opposed to + *costive* causing constipation.) Against constipation. Now isn't that a good idea in an iron-containing hematinic?

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A Division of American Cyanamid Company
Pearl River, New York 10965

TAO® (triacetyloleandomycin)

Brief Summary

INDICATIONS: Include staphylococci, streptococci, pneumococci and gonococci. Recommended for acute, severe infections where adequate sensitivity testing has demonstrated susceptibility to this antibiotic and resistance to less toxic agents.

CONTRAINDICATIONS: Contraindicated in pre-existing liver disease or dysfunction, and in individuals hypersensitive to the drug.

PRECAUTIONS: CAUTION: USE OF THIS DRUG MAY PRODUCE ALTERATIONS IN LIVER FUNCTION TESTS AND JAUNDICE. CLINICAL EXPERIENCE AVAILABLE THUS FAR INDICATES THAT THESE LIVER CHANGES WERE REVERSIBLE FOLLOWING DISCONTINUATION OF THE DRUG.

Not recommended for prophylaxis or in the treatment of infectious processes, which may require more than ten days continuous therapy. In view of the possible hepatotoxicity of this drug when therapy beyond ten days proves necessary, other less toxic agents should be used. If clinical judgment dictates continuation of therapy for longer periods, serial monitoring of liver profile is recommended, and the drug should be discontinued at the first evidence of any form of liver abnormality. When treating gonorrhea in which lesions of primary or secondary syphilis are suspected, proper diagnostic procedures, including dark-field examinations, should be followed. In other cases in which concomitant syphilis is suspected, monthly serological tests should be made for at least four months. When used in streptococcal infections, therapy should be continued for ten days to prevent the development of rheumatic fever or glomerulonephritis. The use of antibiotics may occasionally permit overgrowth of nonsusceptible organisms. A resistant infection or superinfection requires re-evaluation of the patient's therapy. In the event such occurs with this drug the medication should be discontinued, and specific antibacterial and supportive therapy instituted.

ADVERSE REACTIONS: Although reactions of an allergic nature are infrequent and seldom severe, those of the anaphylactoid type have occurred on rare occasions.

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In vitro
susceptibility results
with TAO® (triacetyl-
oleandomycin)
in *Staphylococcus aureus* cultures,
as shown in
studies of
antibiotics.

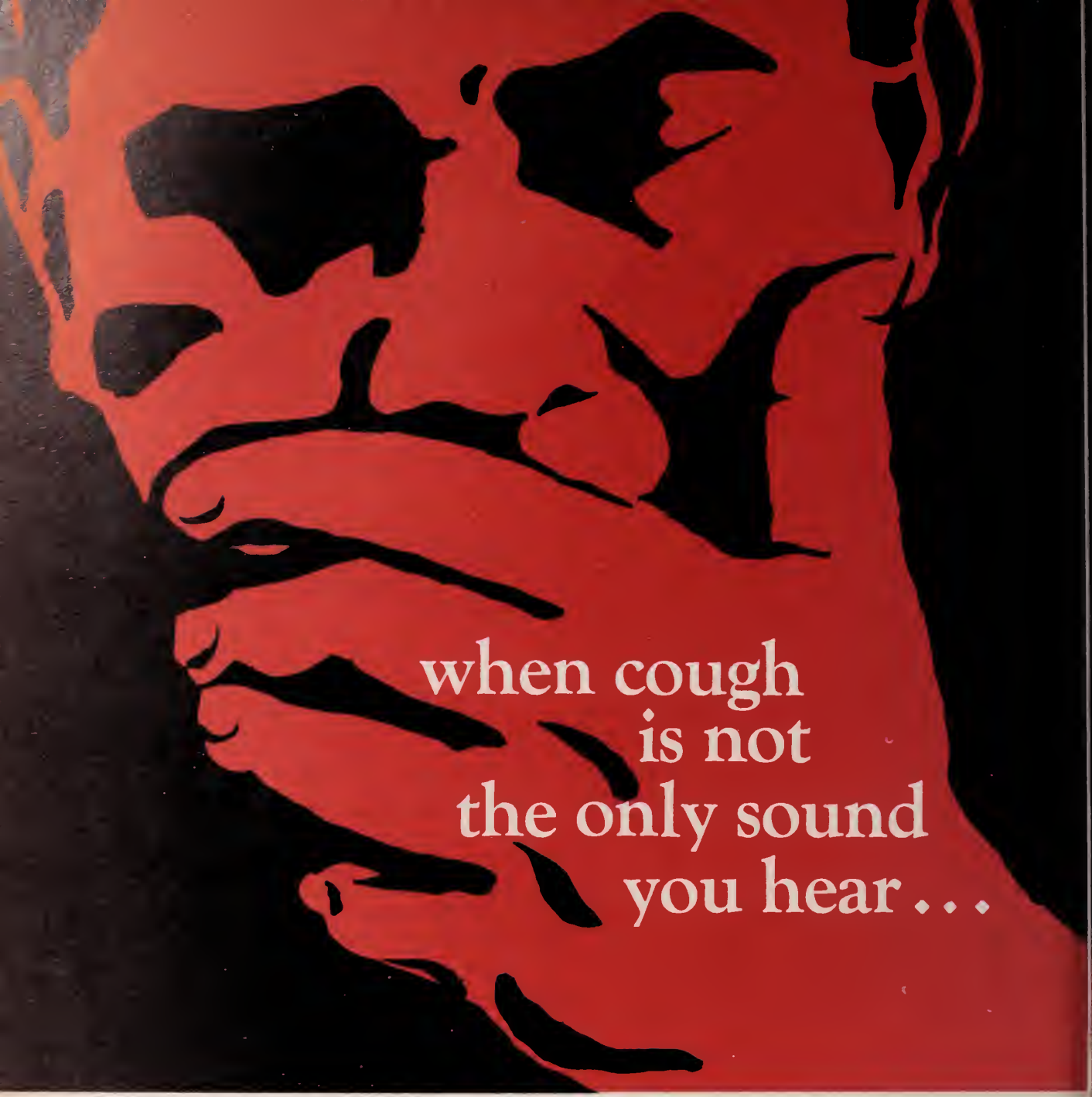
SUSCEPTIBILITY RESULTS[1,2,3]
Staphylococcus aureus

# OF CULTURES	YEAR	% EFFECTIVE
6,723	1962	88.6%
5,435	1963	88.0%
10,384	1964	88.5%

References: 1 Fowler, J Ralph et al Clinical Medicine 70 547 (Mar.) 1963 2 Isenberg, Henry D. Health Laboratory Science 1 185-256 (July Aug 1964 3 Isenberg, Henry D Health Laboratory Science 2 163 173 (July 1965

TAO® (triacetyl-
oleandomycin)
is a macrolide antibiotic, for use only in
the treatment of acute severe
infections where adequate
sensitivity testing has
demonstrated susceptibility
to this antibiotic and resistance
to other less toxic agents.





OMNI-TUSS® b.i.d.

. . . because OMNI-TUSS is indicated for cough associated with upper respiratory tract infections, bronchitis, bronchiectasis, bronchial asthma, emphysema, sinusitis and rhinitis, hay fever, or other allergic conditions. Any of these conditions may exhibit the general symptom syndrome—coughing, wheezing, bronchospasm, and tenacious mucus—which may benefit from the antitussive, bronchodilative, antihistaminic, and expectorant action of Omni-Tuss.

The therapeutic usefulness of Omni-Tuss is enhanced by a unique resin complex formulation providing the clinically desirable advantages of: (1) uniform drug availability throughout an extended period, (2) 8 to 12 hours of symptomatic control, (3) minimal dosage requirement, (4) minimal side effects.

Economical, efficient **b.i.d.** dosage—extremely well-tolerated by children, 6-12, and adults.

'Omni Tuss' Suspension: Each teaspoonful (5 cc.) contains 10 mg. codeine (Warning: May be habit-forming), 5 mg. phenyltoloxamine, 3 mg. chlorpheniramine, 25 mg. ephedrine, all as cation exchange resin complexes of sulfonated polystyrene, and 20 mg. guaiacol carbonate.

Available on prescription only. Class X exempt narcotic. Permissible on oral prescription.

Dosage: *Adults:* 1 teaspoonful (5 cc.) q12h.
Children (6-12 *years*): ½ teaspoonful q12h.

Side Effects: Minimal, but when encountered may include jitteriness, nausea, drying of mouth, insomnia, constipation, which disappear upon adjustment of the dose or discontinuance of treatment.

Precautions and Contraindications: For complete detailed information, refer to package insert or official brochure.

Strasenburgh

Strasenburgh Laboratories Division
Wallace & Tiernan Inc., Rochester, N.Y.

END OF THE 90th

(Continued from Page 720)

Committee on May 15, 1967 stating AMA's support of the bill's principal provisions.

H.R. 6418 Partnership for Health Amendments testimony was received by the House Interstate and Foreign Commerce Committee on June 20, 1967, stating AMA's partial support of the bill and offering certain amendments.

H.R. 10242 Comments on Medical Officer Strength of the Armed Forces were submitted to the House Armed Services Committee on July 26, 1967 stating AMA's support and proposing certain amendments.

H.R. 12483 Testimony on the National Eye Institute was submitted to the House Interstate and Foreign Commerce Committee on October 31, 1967, in support of the bill.

S.J. Res. 117 White House Conference on Aging in 1970 comments were submitted to the Senate Special Committee on Aging on December 5, 1967, in support of the legislation.

H.R. 15355 Dangerous Drug Penalty Amendments testimony was submitted to the House Interstate and Foreign Commerce Committee on March 6, 1968 in partial support of the proposal.

H.R. 10790 AMA's statement on Radiation Control for Health and Safety Act was submitted to the Senate Commerce Committee on July 3, 1968. The Association opposed federal licensure of x-ray technicians and federal accreditation of schools to train the technicians.

H.R. 17748 Occupational Safety and Health Act comments were submitted to the House Education and Labor Committee on July 12, 1968 stating AMA's support for federal assistance to states to help improve their programs. The Association suggested support for a federally chartered professionally supported National Council on Hazardous Physical and Chemical Agents.

S. 3094 AMA's statement on the Extension of Regional Medical Programs was submitted to the Senate Labor and Public Welfare Committee on July 12, 1968 in partial support of the bill and offering certain amendments to the legislation.

On three occasions, AMA witnesses addressed Congressional Committees during "investigational hearings." These hearings are called to solicit information which may be helpful in deciding whether legislation is the appropriate answer to a current problem.

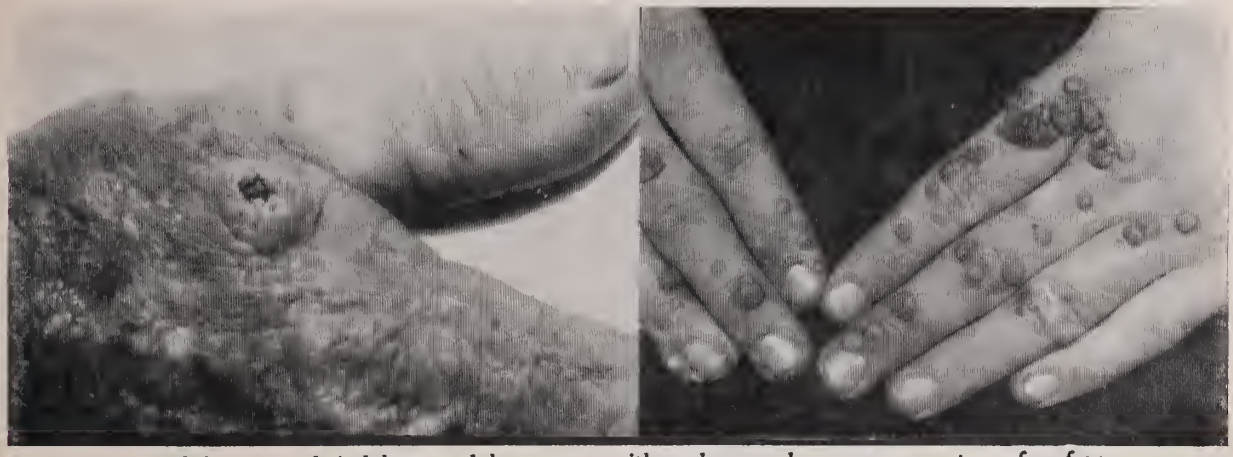
The first such was Doctor John C. Nunemaker's appearance before the House Judiciary Committee to provide information on the Immigration Aspects of the Mutual Educational and Cultural Exchange Act. Doctor Nunemaker is the Director of AMA's Department of Graduate Medical Education.

On February 2, 1968, Theodore B. Van Itallie, M.D., and Harry C. Shirkey, M.D., responding to the Committee Chairman's request, testified before the Senate Judiciary Subcommittee on Antitrust and Monopoly on "obesity control." The AMA witnesses made a series of strong statements detailing the hazards incurred in the administration of irrational drugs for the control of obesity.

On May 1, 1968, C. H. William Ruhe, M.D., Director of AMA's Division of Medical Education urged a Subcommittee of the House Committee on Appropriations to allocate sufficient federal funds for the support of medical education.

DERMAQUIZ

Conducted by FRANCESCO RONCHESE, M.D.



At left, a round, indolent, nodular tumor, with a depressed verrucous center, of a few months' duration; in an elderly man.

At right, many scattered verrucous tumors, of various sizes, some periungual; in a boy.

Answer on 3rd cover



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Beautiful Five Bedroom Home

3½ Baths, Large Panelled Family Room with raised hearth Fireplace, Large living room, Sun room, Breakfast room, large Recreation room. 13 rooms plus lots of extra space in dry cellar and walk-up attic. Two large bow windows, intercom, loft in garage, two zone forced hot water gas heat (very low bills), one acre lot with beautiful tall trees and exclusive neighborhood, bordering R. I. Country Club property (2 sides). View of Narragansett Bay and Echo Lake. Many other extras. Built 1960.

Firm $85,000 through your broker or ours. For direct negotiation, phone me at my home (245-2755) nights or weekends or my office, R. A. DEROSIER AGENCY, 54 Custom House Street, Providence, Rhode Island 02903.

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Quietude for the hypertensive

Butiserpine®

TABLETS

BUTISOL SODIUM® (sodium butabarbital) 15 mg. and Reserpine 0.1 mg.

Warning: May be habit forming.

for gentle, long-term, blood-pressure control

Butisol Sodium (sodium butabarbital) acts promptly to relieve anxiety while the low dosage of reserpine builds gradually to an effective level for continuous, smooth control of tension and blood pressure. Thus effective therapy can be achieved without the hazards of more potent antihypertensive agents or of reserpine in larger doses.

Contraindications: Porphyria, peptic ulcer, ulcerative colitis, mental depression, sensitivity to either component. *Warning: Use in Pregnancy:* Use reserpine in women of child-bearing age only when essential to patient welfare. Increased respiratory secretions, nasal congestion, cyanosis, and anorexia may occur in infants born to reserpine-treated mothers.

Precautions: Exercise caution in moderate to severe hepatic disease. Elderly or debilitated patients may react with marked excitement or depression. Observe for signs or symptoms of peptic ulcer or ulcerative colitis. Discontinue at first sign of mental depression; keep in mind possibility of suicide. Exercise extreme caution in history of mental depression. May produce cardiac arrhythmias when used with digitalis and quinidine, or may precipitate biliary colic in patients with gallstones. Discontinue 1 to 2 weeks before surgery; inform the anesthesiologist in event of emergency surgery. Exercise caution in history of epilepsy. Discontinue 1 to 2 weeks before ECT.

Adverse Reactions: Drowsiness, skin rash, "hangover," systemic disturbances, increased salivation and gastric secretion, nausea, vomiting, increased intestinal motility, loose stools, angina-like syndrome, arrhythmias, bradycardia, flushing, hypotension, nervousness, paradoxical anxiety, rarely atypical Parkinsonian syndrome, central nervous system sensitization (manifested by dull sensorium, deafness, glaucoma, uveitis and optic atrophy), dryness of mouth, syncope or dizziness, epistaxis, purpura secondary to thrombocytopenia, asthma in susceptible persons, nasal congestion, weight gain, and impotence or decreased libido.

Usual Adult Dosage: Initially, 1 to 4 tablets daily for one week; maintenance, 1 to 2 tablets daily. When used with other antihypertensive agents, reduce dosage of both drugs about 50% and observe carefully for changes in blood pressure.

McNEIL

McNeil Laboratories, Inc.
Fort Washington, Pa.



THE WASHINGTON SCENE

A Summary Report Prepared by the Washington Office of the American Medical Association.

Three-fourths of the medicare Part B carriers now are using individual physician fee profiles in determining reasonable charges.

The Social Security Administration said that these carriers, a total of 36, collectively process 80 per cent of the medicare bills submitted by physicians. Prevailing fees continue as a major factor in the reasonable charges determined by the carriers.

The remaining 14 carriers which have not yet fully developed the individual physician fee profiles, or the computer capacity for using them, are employing other interim techniques. Some use, in addition to prevailing fees, fee schedules; others, relative value scales, or similar techniques, in determining reasonable charges.

The medicare law calls for individual determinations by the carrier which take into account the customary charges of the physician and the prevailing charges in the locality for similar services. In addition, carriers must assure that the charges determined to be reasonable for medicare beneficiaries are not higher than the charges for comparable services under comparable circumstances to their own policyholders and subscribers, according to the SSA.

Payment is to be made on the basis of the lowest of those three criteria, or the physician's actual charge, if that is still lower, the SSA said.

"Making a reasonable charge determination involves checking each bill against compiled data on the individual physician's customary charges for similar services and the prevailing level of charges for such services in the locality in which the physician practices," the SSA said.

"The development of physician fee profiles," according to Thomas M. Tierney, medicare's director, "present a unique challenge to both the SSA and the contracting carriers. At the time of medicare's enactment, there was no industry-wide pattern in the health insurance field on the approach to reasonable charge determination.

"There is evidence now that the successful application of the guidelines interpreting the medicare reasonable charge provisions, including the required development and use of individual physician fee profiles, is leading to a more systematized and consistent approach to the payment of physicians' bills in the health insurance field generally."

The medicare hospital deductible will be increased from $40 to $44 January 1, 1969. The law specifies that if an annual review shows that hospital costs have changed significantly, the hospital deductible amount must be adjusted for the following year. Necessary increases in the deductible amount are to be made in $4 steps to avoid small annual changes.

* * *

The shortage of physicians, particularly general practitioners, was cited in a government report as a factor in the increase in physicians' fees since World War II.

The Bureau of Labor Statistics (BLS) reported that charges for medical care, including hospitalization, has risen at an annual rate of 3.9 per cent since World War II while prices of all consumer items combined advanced at a rate of 2.6 per cent per year. The bureau said that medical care prices had risen at a faster rate in recent years, 6.6 per cent in 1966 and 6.4 per cent in 1967.

The report said that physicians' fees, while not advancing as rapidly as hospital charges, had more than doubled in the past 10 years. Hospital charges more than quadrupled.

"The rise in physicians' fees during the 1946-67 period is partially due to the general rise in price levels and to the physicians' need for increased income to cover his personal and business costs," the report said.

"This is especially true for the past two years. Doctors have tended to attribute their higher fees

(Continued on Page 725)

Dilantin®
(diphenylhydantoin)

PARKE-DAVIS

In untold thousands of epileptic patients... Dilantin has been, and continues to be, the bedrock of therapy.

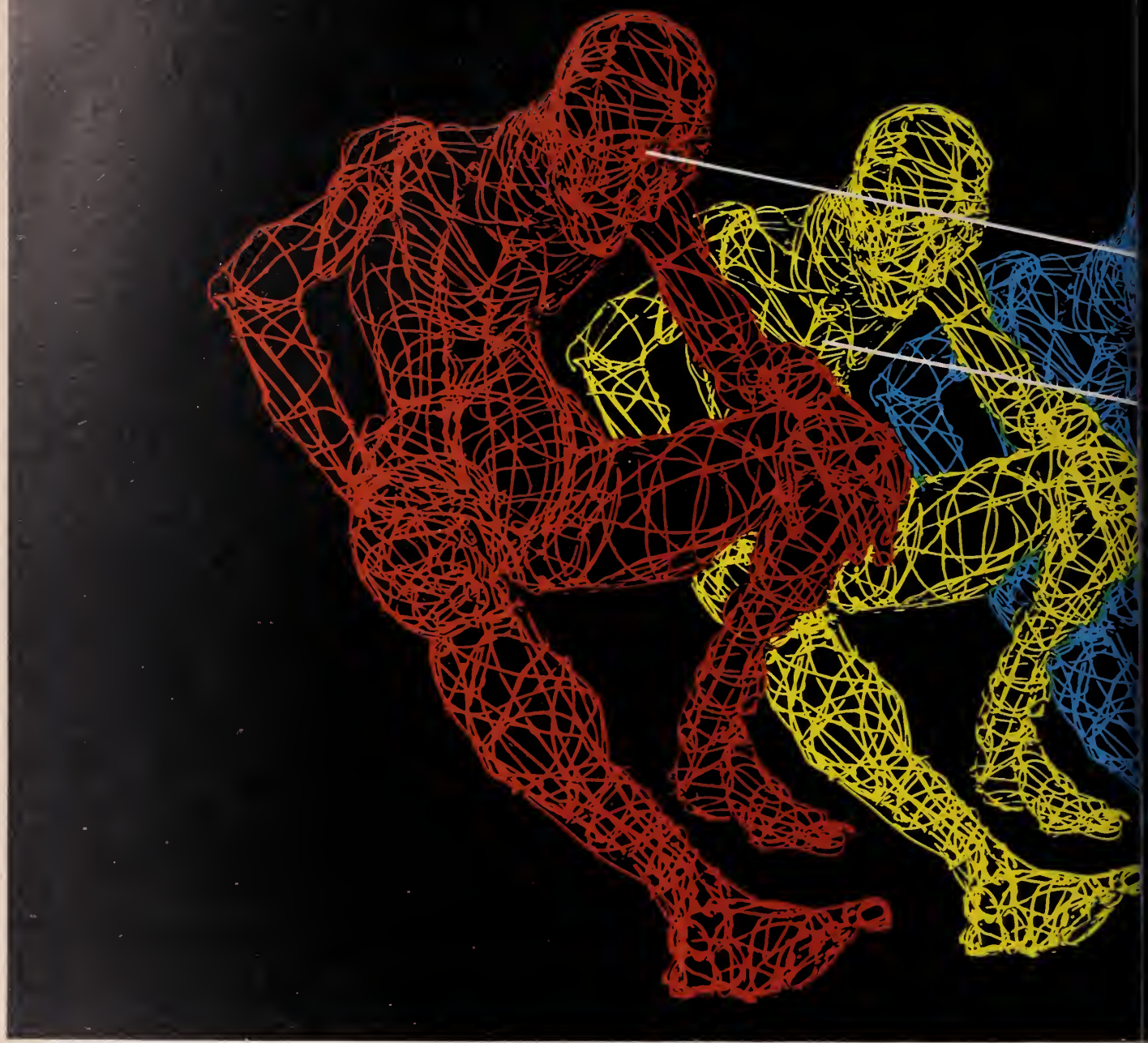
DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anticonvulsant drugs.
PRECAUTIONS: Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored. ADVERSE REACTIONS: Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.
DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.
Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

PARKE-DAVIS 01SR67



a comprehensive hematinic



Description: Each Pulvule® contains—

Special Liver-Stomach Concentrate, Lilly (containing Intrinsic Factor)	150	mg.
Cobalamin Concentrate, N.F., equivalent to Cobalamin (The total vitamin B_{12} activity in the Special Liver-Stomach Concentrate, Lilly, and the Cobalamin Concentrate, N.F., is 15 micrograms.)	7.5	mcg.
Iron, Elemental (as Ferrous Fumarate)	110	mg.
Ascorbic Acid (Vitamin C)	75	mg.
Folic Acid	1	mg.

Indications: Trinsicon® (hematinic concentrate with intrinsic factor, Lilly) is a multifactor preparation effective in the treatment of anemias that respond to oral hematinics, including pernicious anemia and other megaloblastic anemias and also iron-deficiency anemia.

Contraindications: Hemochromatosis and hemosiderosis.

Precautions: Anemia is a manifestation that requires appropria investigation to determine its cause or causes.

In pernicious anemia, the use of folic acid without adequa vitamin B_{12} therapy may result in hematologic remission but ne rological progression. Adequate doses of vitamin B_{12} (parenter or oral with potent intrinsic factor as in Trinsicon® [hematin concentrate with intrinsic factor, Lilly]) usually prevent, halt, improve the neurological changes.

As with all preparations containing intrinsic factor, resistan may develop in some cases of pernicious anemia to the potenti tion of absorption of physiological doses of vitamin B_{12}. If resis ance occurs, parenteral therapy, or oral therapy with so-calle massive doses of vitamin B_{12}, may be necessary. No single reg men fits all cases, and the status of the patient observed follow-up is the final criterion for adequacy of therapy. Period



You can treat combined deficiencies with

Trinsicon®

—the multifactor hematinic

Vitamin B_{12} plus intrinsic factor (15 mcg. B_{12} activity)—helps provide adequate levels of this important vitamin.

Folic acid (1 mg.)—treats nutritional macrocytic anemias and/or malabsorption syndromes.

Ascorbic acid (75 mg.)—augments the conversion of folic acid to its active form and helps iron absorption.

Iron (110 mg.)—treats hypochromic anemia.

ical and laboratory studies are considered essential and are ommended.

erse Reactions: In rare instances, iron in therapeutic doses duces gastro-intestinal reactions, such as diarrhea or consti- on. Reducing the dose and administering it with meals will imize these effects.

n extremely rare instances, skin rash suggesting allergy has owed oral administration of liver-stomach material. Instances apparent allergic sensitization have also been reported after administration of folic acid.

age: One Pulvule twice a day. (Two Pulvules daily produce a ndard response in the average uncomplicated case of perni- us anemia.)

v Supplied: Pulvules Trinsicon® (hematinic concentrate with nsic factor, Lilly), in bottles of 60 and 500. [032568]

Additional information available to physicians upon request.

Eli Lilly and Company, Indianapolis, Indiana 46206.

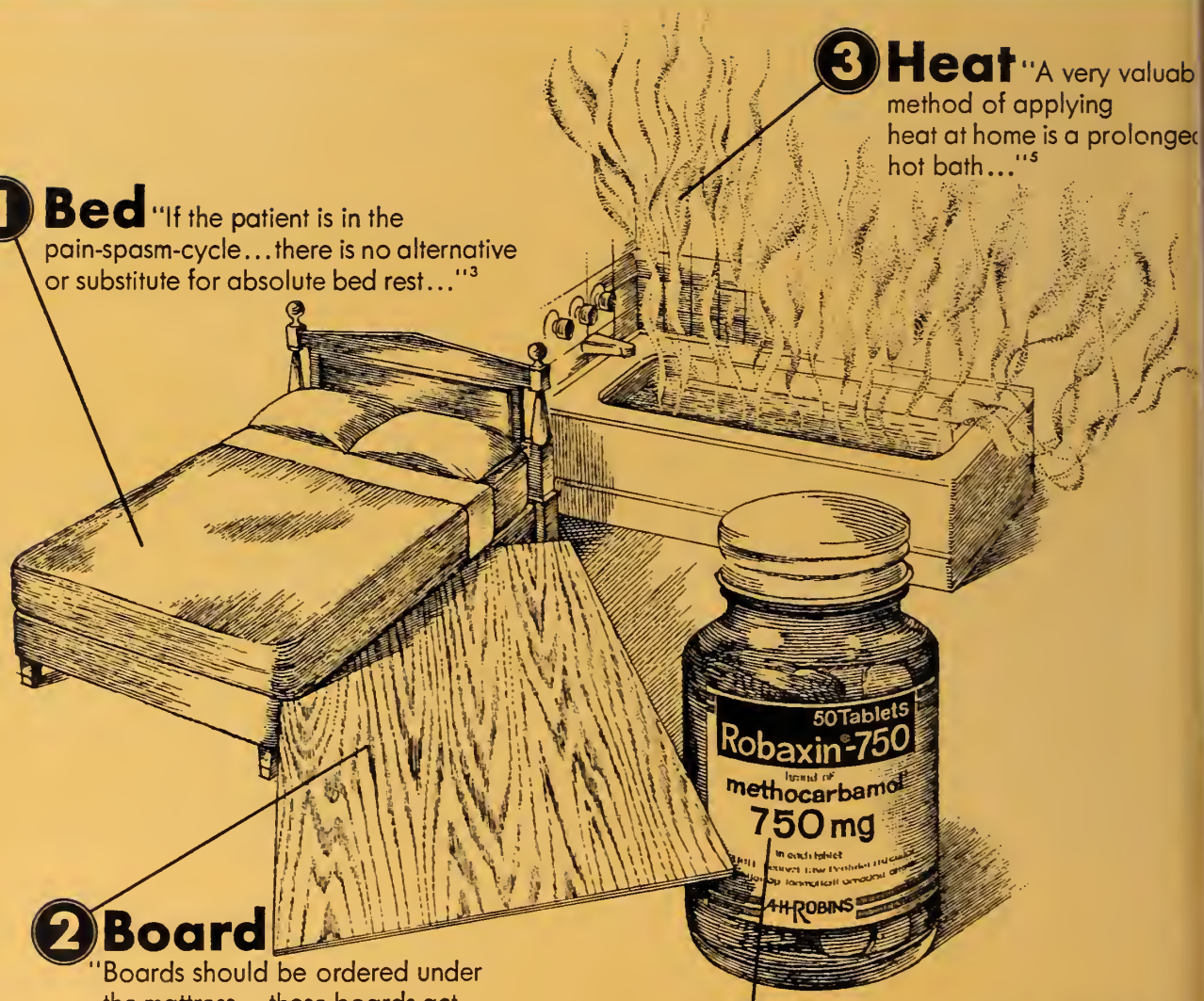
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LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuab method of applying heat at home is a prolonge hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Rabaxin Injectable (methocarbamol, 1 Gm./10 cc.)

References: (1). Gadfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gattschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cazen, L.: Sauth Dakata J. Med. 18:26, 1965. (5). Sato-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteapath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

A·H·ROBINS A. H. ROBINS COMPANY RICHMOND, VIRGINIA 23220

WASHINGTON SCENE

(Continued from Page 724)

in recent years to the general economic conditions and the higher cost of doing business. Nevertheless, some charges clearly reflect the shortage of doctors. With an overload of patients, physicians in some cases have tried to discourage the practice of making house calls by raising the rate for such a service to a level that few patients are willing to pay. The postwar emphasis on medical specialists has also helped to boost physicians' fees since general practitioners have become scarce and specialists, with their extra training, are able to command higher fees."

The number of GP's declined from 73,593 in 1963 to 68,920 in 1967 while the number of physicians in all categories was increasing from 276,475 to 308,475.

The BLS conceded that its reports on health care costs do not give adequate consideration to improvements in the quality of medical care as reflected in longer life spans, improved and more efficient techniques for treatment, shorter hospital stays, etc.

"It is obvious that there are many problems of definition and measurement to be solved before any progress can be made in introducing appropriate methods of measuring medical care price changes in a more meaningful way," the report said.

Two other federal developments dealt with medical care for the poor. The Board of Medicine of the National Academy of Sciences announced start of a comprehensive, two-year study titled "Health and the Poor." A joint state-federal task force reported on its study of costs for medical and public assistance programs.

The Board of Medicine named a special panel for its study which will cover: the quantity and quality of medical care the poor now receive; existing federal programs, such as medicaid, anti-poverty projects, maternal and child health programs, and community immunization programs; future needs and possible programs; and the economics of medical care for the poor.

Recommendations of the joint task force to the Department of Health, Education and Welfare included:

—States should draw samples to produce information on the current utilization of each of the medical care services offered, and their costs. The sample should provide data on how much of these costs are borne by the medical assistance program, and the amount that comes from other sources.

* * *

President Johnson signed into law a bill providing for tougher penalties for illegal traffic in amphetamines and barbiturates. LSD also is covered specifically.

The new law makes illegal possession, manufacture or disposal of the drugs a misdemeanor carrying maximum penalties ranging from imprisonment of one year and a fine of $1,000 to imprisonment of 15 years and a fine of $20,000. Leniency is authorized for first offenders.

Johnson praised the law as a measure that will "strengthen the hands of our police and give our families protection." He said it should "put the drug peddlar in jail." But, he added, the active support of all Americans — both adults and young — is needed.

* * *

Richard M. Nixon will take over as President pledged to oppose national compulsory health insurance and federal control of physicians' fees. Highlights of his position on health care issues: —

FEDERAL ROLE IN MEDICINE

The role of the federal government in medicine should be supportive, never dominating. It should serve as a catalyst and supplement private efforts only as needed.

MEDICARE

Although the program has been plagued by financial and administrative problems, it offers good potential if wisely administered.

Medicare must provide needed services at the lowest possible cost. The program could be endangered by a continuing escalation of costs.

More effort is needed to reduce dependence on costly hospitalization through better use of extended care facilities and increased use of outpatient care. Also needed is a re-examination of reimbursement formulas and experimentation with financial incentives to assure that the program encourages efficiency at all levels.

MEDICAID

I favor the basic philosophy of medicaid — that of helping medical indigents who need aid to meet medical expenses. Unfortunately, the program has fallen short of its expectations. . . .

What is needed is a careful reassessment of medicaid, especially at the local level, with full professional guidance, and emphasis on advice from physicians. There also is a need for simplication of literature and application forms.

NATIONAL COMPULSORY HEALTH INSURANCE

I oppose a national compulsory health insurance program because I do not want to lower the quality of medical care in the United States. Also, new health programs should be geared only to persons in need. . . .

I want to see that every individual who needs medical care is able to get it. But I want it to be good medical care. That's why I want to keep the doctors free from government control as much as

(Continued on next page)

Consultation
INVITED

Doctor, you are an expert! Your education, experience and judgement are invaluable. When people need medical advice, they call on you.

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possible and oppose extension to a national compulsory health insurance program for everyone.

COMPULSORY AREAWIDE HEALTH PLANNING

I oppose compulsory areawide health planning. We can't assure communities better health planning just by making such groups compulsory. Areawide planning should be left to state and local determination.

FEDERAL CONTROL OF PHYSICIANS' FEES

I oppose federal control of physicians' fees. Our system is an open, competitive market, assuring an individual the prerogative of setting a value on the services he performs. I would be as opposed to infringing on this right by regulation of physicians' fees as I would be to regulating fees charged by the members of any other profession.

DEPARTMENT OF HEALTH

As President, I intend to establish a Commission on Government Reorganization to study thoroughly ways of increasing efficiency in government organization as well as making it more responsive to the people.

MENTAL HEALTH

We must develop new methods of treating the mentally ill. . . .

PREVENTIVE MEDICINE

The 100 per cent income tax deduction for nonreimbursable drug and medical expenses of those over 65 should be restored.

Preventive medicine is, in my judgment, both an opportunity and a major challenge to medicine.

Automated mass screening programs would seem to have great possibilities even though they are generally still in their infancy and therefore cannot yet be gauged concerning their effectiveness in preventing chronic illness and reducing deaths. Information about these programs is still inadequate to warrant a broad federal program.

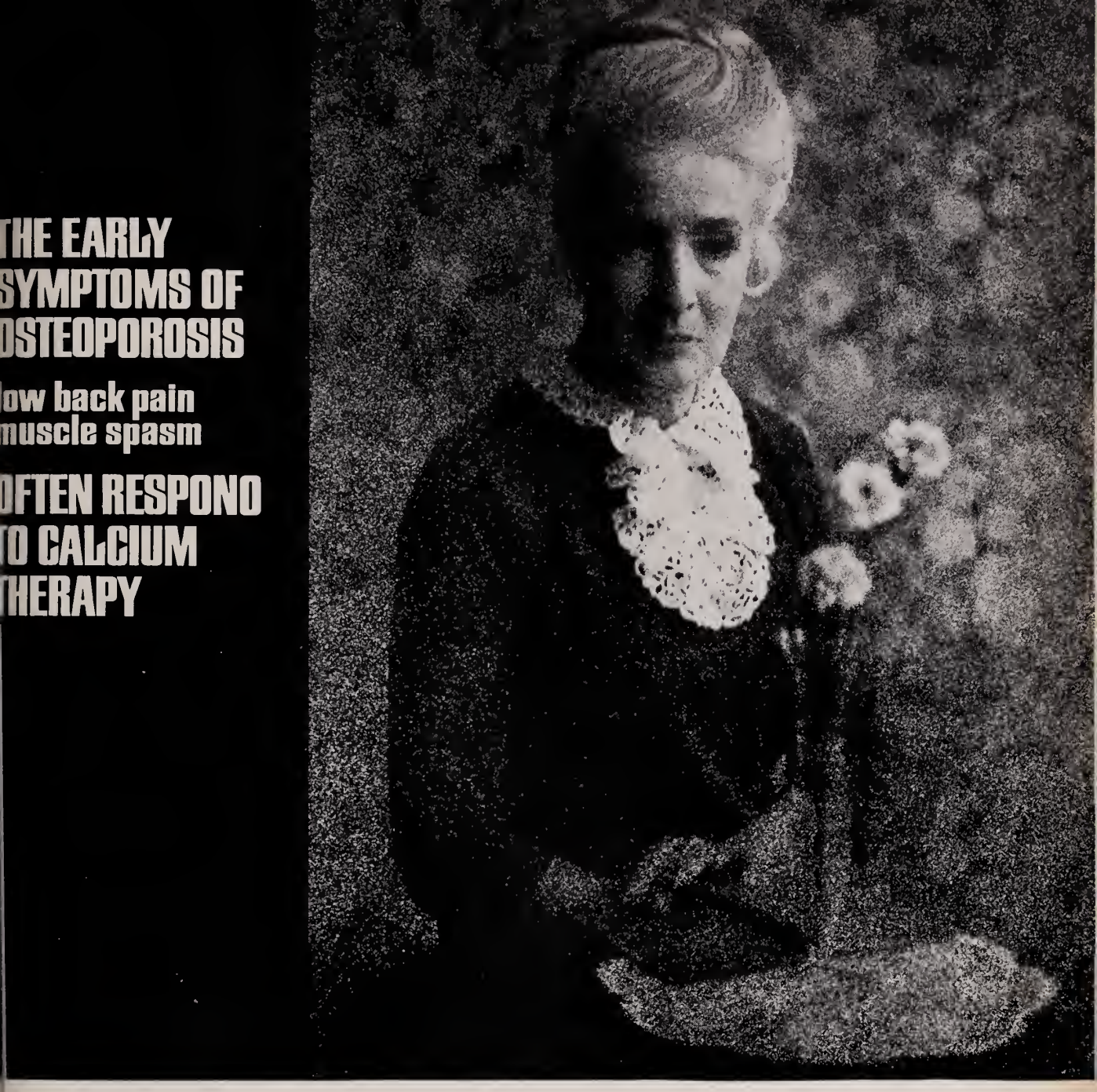
HILL-BURTON ACT

As demand for hospital facilities increases, additional funds under the Hill-Burton Act for construction and modernization of such facilities will be required to supplement state and local efforts.

To assure the most efficient use and distribution of Hill-Burton funds, a proposal for block grants in this area should be considered.

ABORTION LAWS

Nothing should be done on the federal level. The abortion laws should be considered by each state, and should be acted upon by each state, depending upon the opinion of that state. . . . I do not think that a nationally-imposed law would be one which would be accepted in many parts of the country, and only when a state — a majority of people of the state — reach a conclusion that they want that kind of legislation, as they did in Colorado and as they may in the state of New York, should such a law be passed or considered.



THE EARLY SYMPTOMS OF OSTEOPOROSIS

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postmenopausal and geriatric patients, low back ain of unspecified origin may be symptomatic of the rly stages of osteoporosis and calcium depletion. eatment with Calcium-Forte, a form of calcium adily available for absorption, may help to restore a sitive calcium balance. In doing so, often it can eviate the symptoms and help to arrest the progress osteoporosis by preventing further skeletal damage.

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Side Effects: In high doses may cause indigestion or diarrhea. Constipation may occur occasionally.
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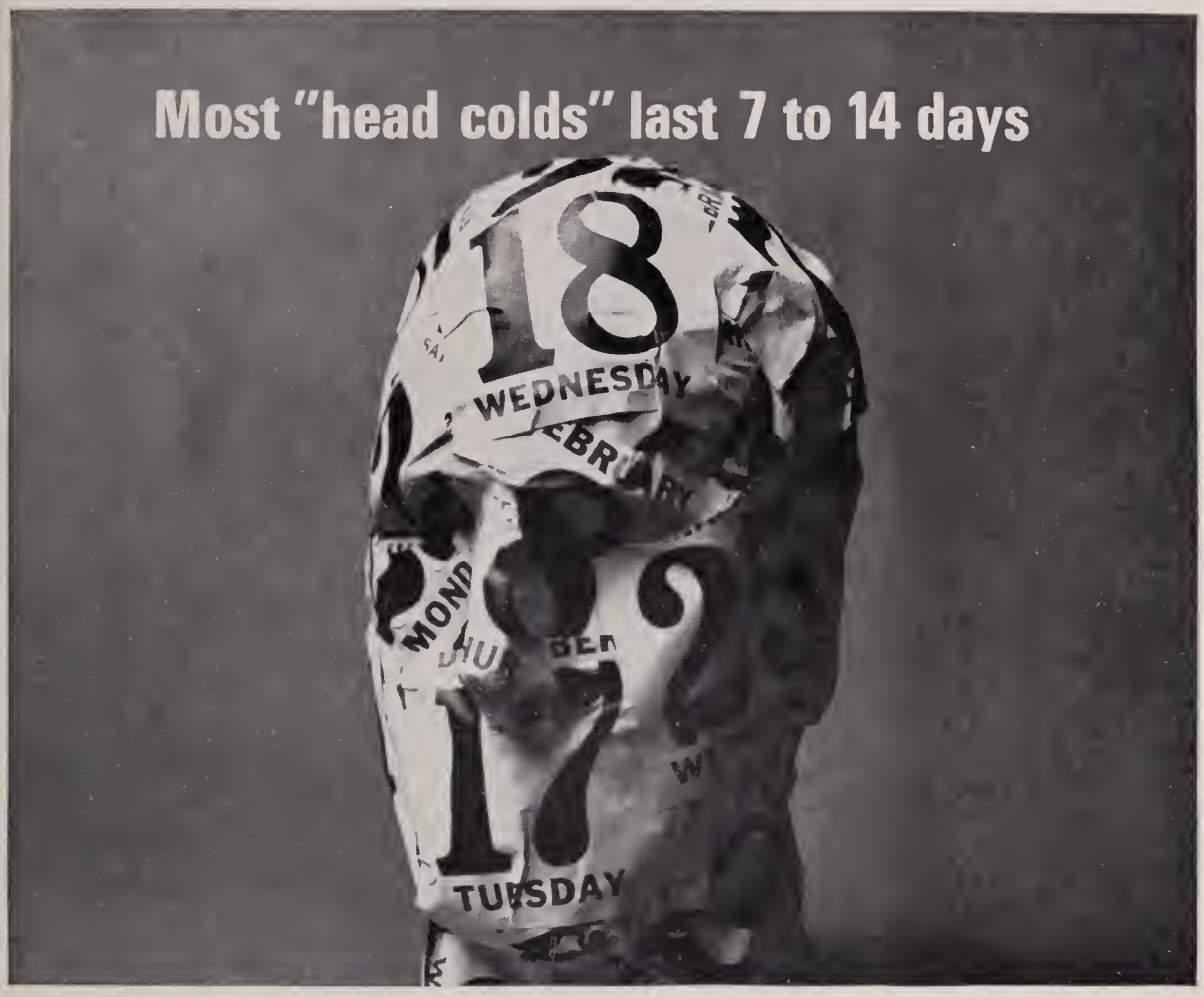
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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

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SOLID WASTE DISPOSAL IN RHODE ISLAND

A Task of Terrifying Magnitude in Both Health and Economic Aspects

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Chief, Division of Air Pollution Control, Rhode Island State Department of Health.

The purpose of this paper is to present the serious nature and magnitude of the problem of solid waste disposal in Rhode Island, particularly from its health and economic aspects, to show how shameful has been our overall record of attempts to handle it and to offer a workable solution for it.

* * *

As in the rest of the United States the disposal of solid waste in Rhode Island was not recognized as a serious problem until after World War I. Prior to that date, even in the big cities, garbage was carted off to piggeries; and, since the "age of packaging" had not arrived, paper wrappers and cartons were not found in sufficient quantity in American life to present difficulties in their disposal. Open dumps were usually found for this purpose, often within congested cities, and people were content to tolerate the air, water, and land pollution these dumps created. Another factor, largely ignored, was the vector nuisance, i.e. the rats and insects these dumps spawned.

During the period between the two great wars many American cities began to find their "open abscess" dumps growing larger and more noisome; moreover, open land for dumps was vanishing. Many cities began constructing incinerators. In Rhode Island, Providence was first with its Kinsley Avenue unit built in 1930, and soon Newport and Warwick built incinerators. The first Providence incinerator proved inadequate for even the small volume generated in that day, and a second unit was built in 1935 at Fields Point. This also proved too small and an addition, giving 100 per cent standby capacity, was built in 1938. At the start of World War II the three cities mentioned above were the only communities in this state with municipal incinerators. With the postwar years America's "age of packaging" began, the volume of combustible solid waste began to explode, and it is steadily increasing. Before Pearl Harbor the solid waste tonnage for a community could be based on a computation of from one to two pounds per person per day. Today the national average is generally accepted as five pounds per day, and this figure is expected to climb rapidly.[12] The picture in Rhode Island has conformed generally with national averages.

During these postwar years only two Rhode Island cities took positive steps in solid waste disposal. In 1960 Woonsocket built a new incinerator of 160 tons per day capacity, and in 1965 Pawtucket built a unit of 400 tons per day capacity. The merits of these two new plants will be discussed later. Providence, Warwick, and Newport continue, at this writing, to utilize their old inadequate, poorly designed, obsolete incinerators, and most Rhode Island communities are still depositing their solid wastes in rodent and insect-infested burning dumps.

However, four developments of recent years offer some hope for an alleviation of the problem. The first was the passage of the federal Solid Waste Disposal Act of 1965, which offers technical advice for communities and states and provides federal assistance grants for demonstration projects. The second was the creation of a Rhode Island Division of Solid Waste Disposal in 1967; and third was the formation of a Rhode Island Governor's Task Force on Refuse Disposal in 1967 which issued an excellent report in February of this year. The main features and recommendations of this report will be analyzed later. Fourth was the formation of a Special Legislative Commission to Study Open Dumping in Rhode Island, which worked diligently for seven months during 1967 and 1968.

THE NATURE OF THE PROBLEM

With the increase of prosperity accompanied by the population explosion our affluent society is rapidly becoming an effluent society. The pollution of the rivers of our nation is sadly evident to even a casual observer, and the same is true

(Continued on next page)

regarding atmospheric pollution. What is not so apparent to the citizen, not professionally engaged in fighting pollution, is that our crowded conditions make it virtually impossible to separate the tasks of abating air, water, and land pollution. The crisis is with man and his total environment. The overall urgent task is "environmental conservation."

United States Public Health Service scientists say that 60 per cent of the estimated 142 million tons of air pollution found in America's atmosphere last year came from automobiles. Yet, each year the United States produces more than twice as many motor vehicles as babies.[5] Automotive and petroleum scientists, backed by vast private and federal funds, are working diligently to reduce these poisons released by motor vehicles. Despite some progress, such as a 60 per cent reduction in carbon monoxide emissions in all foreign and domestic 1968 model cars, many experts feel that only an exhaust-free electric car will save our atmosphere from complete vitiation by the turn of the century. Even if the electric car is perfected, what will we do with the old cars? They present a serious solid waste disposal problem!

There are 460,000 registered motor vehicles in Rhode Island. If the average life of a car is ten years, around 46,000 cars are abandoned annually in this state, presenting a difficult disposal problem. A car body brings from $6 to $7 at central salvaging depot, but first it has to be stripped of all components — e.g. tires, upholstery, oil. Laboriously handstripping of a car can cost as much as $10, but it can be stripped completely by open burning in 15 minutes.[6] However, scientists working on a United States Public Health Service research project on open burning found that pollution from burning auto components is alarming. Taking only one of the invisible poisons, 125 pounds of carbon monoxide are given off for every ton of auto components burned. As to visible pollutants, the heavy black smoke pours forth 100 pounds of particulate matter for every ton of auto components burned. This is one of the best illustrations of how closely the solid waste disposal and air pollution control problems are interrelated. The scientists continued their research on open fires at municipal refuse dumps which produced 85 pounds of carbon monoxide and 16 pounds of particulate matter for each ton of dump refuse burned. Next they found 65 pounds of carbon monoxide and 17 pounds of particulate matter for every ton of landscape refuse burned.[4] The last test proves conclusively the health hazard occurring in spring and fall when entire Rhode Island communities decide, one the same day, to burn leaves. Another graphic illustration is the clearing of miles of brush by burning in the path of the interstate freeways to compound the pollution. Yet, this state is slow to desist in the practice of the disposal of solid waste such as auto components, public dump refuse, and landscape debris by open burning. The solution and progress in abating these pollution-causing refuse disposal methods will be discussed latter.

Each year the United States produces 48 billion cans, plus 28 billion long-lived bottles and jars. Paced by hardy plastic containers the average American's annual output of 1,600 lbs. of solid waste is rising by more than 4 per cent a year. Disposal already costs $3 billion a year.[1] Rhode Island proportionately faces a similiar economic burden in disposing of its solid waste;





Fig. 1. and 2. Solid Waste Disposal in North Kingstown.

and, like the rest of the nation, for the most part we are doing a very poor job of it.

Since it is a basic fact of physics that man can neither create nor destroy matter, he is faced with the critical dilemma of the final disposition of his solid wastes. Dumping the waste in our streams, ponds, bays, or fields is a despoilation of nature even if no burning takes place. An outstanding example of an open dump creating all three pollutions, land, water and air, as well as a vector nuisance, is the North Kingstown Town Dump on Belleville Pond off Oak Hill Road in that town. (Fig. 1 and 2). The dump is filling in a large sement of the pond as well as a valuable marsh. Belleville Pond is part of an attractive chain of lakes that drain into Narragansett Bay. Black plumes of smoke sometimes travel from this dump out over Col Rodman Highway to the west. A fatuous program of rat extermination is being conducted there, and carcasses of dead rodents can be found among the fish heads, offal, and other putrescibles dumped there in the open. Amid the crackle of the flames from burning debris are the cries of sea gulls which congregate there by the hundreds to scavenge for food wastes and spread contamination, as they do at all Rhode Island dumps. Recently two volunteer West Warwick firemen were overcome by smoke inhalation (with one requiring hospitalization) while fighting a fire at the town dump.[7] And, with or without burning, the open dump provides excellent fodder and harborage for rodents and insects.

Because of the constant change in the nature of our solid waste (e.g. the growth of plastic containers) its combustion characteristics are constantly changing in calorific value and moisture content. This has caused incinerator design engineers to revise their theories with disturbing frequency.[2] In contrast to municipal engineering problems such as water supply and sewage disposal systems for which there are hundreds of outstanding textbooks, there is not one recognized test on municipal incinerator design. Thus, it is easy to realize why nearly all of the nation's incinerators and four out of Rhode Island's five plants do an extremely poor job of burning refuse and punish their neighbors by steadily showering them with smoke, dust, and fumes from the incinerator chimneys.

Among the other severe solid waste problems faced by Rhode Island and the rest of the nation is the disposal of brush and building demolition debris in the path of interstate highway construction and urban renewal mentioned previously. Since the highway program is 95 per cent federally financed and urban renewal activities receive 75 per cent federal assistance, it is hoped that air pollution-conscious federal officials will offer some advice and assistance in solving these problems.

Contractors clearing brush for the highways often burn areas on a stretch several miles long. Since they complain that the brush is wet even in winter, they lace it with old rubber tires to sustain combustion. The result is heavy smoke, dust, and poisons which spread for miles. Demolition debris usually contains so many large structural timbers, impregnated and covered with so much metal, concrete, and plaster, that cutting them with conventional tools for reduction in size to fit existing incinerators is not practicable. This debris is too bulky for proper compaction and cover in a sanitary landfill. Therefore, the only alternative is open burning and the previously cited USPHS report on open burning showed dramatically the heavy pollution caused by this activity.

(Continued on next page)



Fig. 3. and 4. Solid Waste Disposal in West Greenwich (left) and North Providence (right).

POSSIBLE SOLUTIONS

Sanitary Landfill. This is not only the least expensive acceptable solution but it is the most satisfactory system, from a sanitation and esthetic viewpoint, for the disposal of solid wastes. One of the finest sanitary landfills is now in operation in an abandoned gravel pit in Barrington.[3] Observers have come from all over this nation and from as far away as West Berlin to study it.

This operation calls for depositing the refuse in the abandoned gravel pit, then compacting it with a bulldozer. At the end of the day the debris is covered with a minimum of six inches of earth and compacted. The site is then secured with no polution or vector dangers. When the fill reaches a level two feet from the top, the remainder is filled with clean earth and the result is a superb recreational area. Barrington created just such a facility last fall and is now working on its second site. The neighbors situated adjacent to the fill are delighted with their newly created ball field and the promise of even more recreational land. Barrington is now operating this facility at a cost of $3 to $5 per ton deposited, and that community has enjoyed a land reclamation project as a dividend for this wholesome activity. All possibilities for landfill should be explored in all of Rhode Island's communities to take advantage of this very economic, sanitary, and rewarding method for as many future years as possible.

Incineration. This is the most expensive method of disposal; and there are very few incinerators, anywhere in this country, which are either burning refuse satisfactorily or emitting gases tolerably free from smoke, dust, and fumes. The best incinerators reduce waste volume by 90 per cent, but accomplish only a 66 per cent reduction in weight. All have a residue which requires a landfill disposal. Frequently this residue is contaminated.

Rhode Island's three old incinerators are all hopeless in their burning, stack emissions, and residue characteristics. The seven-year-old Woonsocket incinerator was so poorly designed (to meet a budget figure) that it is not much better than the three old units mentioned. The Pawtucket plant has excellent burning qualities, but could improve its gas wet-scrubbing system. However, it has tremendous capacity and already takes all Central Falls waste by contract.

With high efficient gas cleaning equipment being required by health authorities, construction costs will soon climb to $10,000 per ton capacity in the near future. Daily operational costs are approximately $5 per ton deposited.[13] Since communities are now generating daily around two tons per thousand people, the wisdom of exhausting the landfill potential before going to incineration is manifest. In both cases regionalization should be considered.

Composting. Composting is a biological process whereby selected refuse is decomposed by regulating temperature, ventilation, and moisture in a confined area. This method reduces the volume of refuse into a usable and salable humus- like product known as "soil conditioner." It should be noted that this is not a fertilizer as frequently thought. There has been an increasing interest in the use of composting as a means of disposal in this country. Europe has successfully employed composting disposal for many years. Houston, Texas, recently authorized three private composting plants to be built to handle that city's refuse. However, only one enjoyed a brief successful operation. This has been true of most attempts to operate a composting plant on a commercial basis. The results of a survey by the Public Health Service published in January 1967 indicated that of sixteen composting operations surveyed only three were still in operation. The primary difficulty has been too small a market for the product and high operating costs. In addition, the process consumes less than half of the refuse volume. Sixty per cent of the volume must still be disposed of by salvaging or in a sanitary landfill. The idea of utilizing refuse in some manner has much merit; and the U.S. Public Health Service in a joint program with the Tennessee Valley Authority has built an experimental composting plant in Johnson City, Tennessee, as a demonstration project to research and evaluate the feasibility of composting as an acceptable means of disposal. However, pending further testing and demonstrated success in the field, composting must be still considered an experimental disposal method. Recently the $1.5 million composting plant at St. Petersburg, Florida, the last operation in the country, was shut down. A city fact-finding committee declared it a "public nuisance" because of odors, but, in addition, found that it was not able to perform its functions properly both in quality or quantity of processing and proved to be an extremely uneconomic venture. Nine composting plants have been shut down in American cities for similar reasons in recent months.[6] The future of composting doesn't appear bright.

Incineration and Disposal at Sea. This is a method which calls for burning refuse on barges at sea, and dumping the sinkable ash at sea. Nonsinking materials are disposed of on shore by conventional methods. This process is said to eliminate water and air pollution in urban areas, while utilizing near inexhaustible room at the ocean floor. Rhode Island's extensive coast would seem to warrant further investigation of this method. How-

ever, possible side effects should be closely studied in terms of pollution of salt water, air, and marine life. In addition, extensive cost studies would be required to test the feasibility of the method. The Harvard University School of Public Health is now conducting a study of this disposal method.

However, oceanologists at the University of Rhode Island School of Oceanography have little enthusiasm for this method of disposal despite the fact that URI is currently working on the subject under a USPHS research grant. The URI scientists are concerned about the possibility of debris deposited on the oceanic continental shelf adversely affecting marine life.

Pyrolysation. This is a process of chemical decomposition by action of heat which produces liquid and solid residue. The solid residue may be formed into a type of charcoal briquette. This low grade fuel may with further experimentation have some commercial value. The City of San Diego is investigating the feasibility of this process.

Shredding, Crushing, and baling. This procedure reduces bulk refuse, usually metals, to scraps by means of grinding. The baled scrap metal is a valuable, salable product that can be re-used. If this process was used in conjunction with a landfill operation it would significantly reduce the quantity of land required for disposal. The high cost of this equipment (range up to $2,000,000) makes it imperative that sufficient quantities of large objects such as autos are available so that efficient use in made of the facility. Therefore, its primary use is for special wastes which can economically be hauled considerable distances to the facility. The process is too expensive to handle ordinary refuse. It is recommend that this process be investigated further, with the possibility of using such an operation as an auxiliary disposal method to conventional landfill and incineration facilities. This type of plant is now operating in Everett, Massachusetts.

Haulage to Remote Areas. A recent development, which may offer an economic, sanitary solution for the immediate years, if not decades, is hauling the refuse by private contractors in freight cars from big cities to disposal sites such as abandoned Pennsylvania strip mines and exhausted Vermont quarries. Recently the City of Philadelphia abandoned its scheduled $18 million incinerator construction program to enter into a four-year experimental contract with a private contractor to haul away all municipal refuse to the strip mine area at the rate of $5.39 per ton as compared with their current average cost of $7.50 for incineration.[11] This company has announced plans to solicit contracts with New England cities for similar arrangements. Providence, Warwick, Cranston, and Newport could well consider weighing the merits of such an operation.

Future Developments. Scientists at many of our best universities are doing research under USPHS grants on every aspect of the solid waste disposal problem. Solutions suggested vary greatly. Some advocate grinding the organic refuse and then piping it into a slurry to desert areas to provide moisture and nutriment for the soil. Harvard School of Public Health scientists have suggested the design of giant incinerator ships, which would burn the refuse far out to sea and require no gas cleaning. The residue would be dumped in deep ocean water beyond the continental shelf.

However, despite the calibre of current research, the only two methods that have proved practicable are landfill and incineration.

REPORT OF THE GOVERNOR'S TASK FORCE ON REFUSE DISPOSAL

This excellent report, released in February, 1968 related very little new to specialists (such as the state's Air Pollution Control and Solid Waste Disposal Divisions) who have been intimately associated with this grave problem. However, it did gather the facts, present them in a logical manner, study basic methods for disposal and offer a solution featuring financial assistance to communities by the state government. The last feature alone makes the work of the task force very valuable. The following is the "Abstract" from that report:

> The report presents a general review of the refuse disposal problems in the state and details a cooperative state and local program for the solution of these problems through 1990.
>
> It is recognized that the majority of the communities in the state use inefficient and unhealthy disposal methods which are of particular concern in a highly urbanized state with a limited amount of vacant land. In a review of disposal methods the report recommends sanitary landfill and incineration as the only feasible general disposal methods for the communities at this time and that composting, high temperature incineration and other experimental methods be considered as they are proven economical and efficient in the future. The estimate and forecast of refuse loads throughout the state is based upon a current estimate of 5 pounds per capital modified to take employee concentration into consideration.
>
> The necessity for defining governmental responsibility for refuse disposal is emphasized. Local governments should have the entire legal responsibility for the disposal of all refuse generated within their borders.
>
> State government should develop and maintain

(Continued on next page)

an area-wide plan for refuse disposal, encourage, and if necessary, enforce regional arrangements, provide technical assistance, and set minimum standards for the location, construction, maintenance and operation of refuse disposal facilities. In addition, state government should provide modest annual grants to the communities to aid in the construction and operation of approved disposal facilities. Additional grants are also proposed as an incentive for the development of regional disposal arrangements. Legislation to implement the proposals is presented.[9]

The legislation, adopted by the 1968 Rhode Island General Assembly, presents the state with a superb opportunity to take immediate steps to begin to cope with the solid waste disposal problem. The most important feature of this legislation is the granting of specified minimum financial assistance, on a population basis, to the communities with larger grants offered to those communities which join together (two or more municipalities) on a regional or cooperative endeavor.[10]

The work of the task force and the resulting legislation could well precipitate the first statewide steps to make progress in solid waste disposal.

RHODE ISLAND AGENCIES AND SPECIAL PROBLEMS

Both the Divisions of Air Pollution Control and Solid Waste Disposal started operations in 1967, and these two divisions have functioned in close conjunction for over a year. At present with other state agencies and federal officials they are exploring the possibilities of winning USPHS research and demonstration grants on the following special problems:

Rubber Tires. It is estimated that approximately one million tires are discared annually from the state's 460,000 registered motor vehicles. Disposal of these tires is difficult since their elasticity causes them to surface years after they have been buried in a landfiell. An application is being processed for two-thirds federal assistance for the design and construction of a nuisance-free, old tire-burning steam generator to be installed at the Rhode Island Medical Center. Federal officials have offered encouragement since this unit would be the world's first.

Urban Renewal and Highway Demolition. The Air Pollution and Solid Waste Disposal Divisions are conferring on receiving federal assistance to start a demonstration program featuring the construction of centrally located bulky wastes incinerators or the installation of a giant debris pulverizer to be located at the Pawtucket incinerator reducing demolition wastes to fit the plant. Such pulverizers have proved successful in Europe. Working with state and federal officials the Air Pollution Division hopes to institute a brush cutting and logging operation procedure in the clearing of woodlands for highways. The present arrangement for highway beautification, after pavement has been poured, is to spread tons of wood chips on the banks as a mulch. A brush chipper operation would acquire the mulch on the site, saving time and money. The Town of Barrington chips its brush and, after spreading mulch over all municipal flora beds, sells the remainder.

Disposal of Abandoned Cars. The Division of Air Control has been aware of the economic difficulties encountered by scrap metal dealers in processing old car bodies for delivery to steel plants, as mentioned previously in this paper. Several conferences have been held with representatives of scrap metal dealers' organizations in an attempt to work out a satisfactory solution.

The only method of body stripping by burning without pollution is by means of an incinerator equipped with an afterburner to consume smoke and a wet scrubber to clean the gases. The small margin of profit per car body earned by the state's hundred odd junked auto dealers makes construction of these specialized incinerators a very steep investment. In the light of this, the Air Pollution Control Division has suggested that the scrap metal dealers study the possibility of forming a cooperative which would provide a centrally located incinerator and facilities for nuisance-free car stripping.

As of this writing a meeting on the subject is being planned. At this meeting there will be participation by state agencies, federal solid waste disposal technicians, authorities on cooperatives, economists and other specialists. A satisfactory solution to this stripping operation problem will not only help the dealers, but will be of immense value in the disposal of these abandoned cars now accumulating in Rhode Island at the rate of almost a thousand a week.

Leaf Burning and Open Fires. The City of Providence uses "vacuum cleaner" trucks for picking up leaves. Cranston has two such units on order. Leaves decompose and return to earth quickly in a landfill. Eventually all non-recreational open fires will have to be banned in this state. The refuse presently disposed of by open burning will have to be handled by landfill or incineration.

SUMMARY

The aspects of solid waste disposal in Rhode Island which this paper attempts to illustrate present problems in esthetics, despoliation of nature and a

blighting of all aspects of man's total environment. However, this presentation can be reduced to two aspects: the effect on our health and the willingness of our people to provide the financial means for correcting this lamentable situation. The enactment of the Solid Wastes Disposal Act is of tremendous importance. In fact, virtually all hope for statewide action hinges on it. Nevertheless, the people of this congested state should realize that efficient regional landfills and incinerators are sound answers for only a few decades. With the population explosion, urban sprawl, and a spiraling per capita daily solid waste generation, we will soon run out of both space and time. For this reason it is the duty of every thinking Rhode Islander to take an active interest in encouraging the future procedures the legislation will support. The Air Pollution Control Division already has started to receive the support of the Pollution Committee of the Rhode Island Medical Society in this fight. The American Medical Association has long ago recognized the danger of man destroying his surroundings and has been working on this problem through its Department of Environmental Health. All of our people and particularly our media of communication, and civic and professional groups should join in and help.

Unfortunately, these planned steps constitute only a holding action to last hopefully until our scientists have devised better methods to dispose of our solid waste by the time that day arrives when there is no open land within striking distance of our vast conurbias. It is a task of terrifying magnitude which up until now we have been sweeping under the rug. Soon the rug will look like a doily on a waste heap. The hour is late, and we in Rhode Island (as well as those in the rest of the nation) must take action. If we fail, and leave such a legacy of uncontrolled waste, future generations will with justification condemn us.

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ONE SENTENCE ESSAY

You have to be a moron to be happy all the time. . . . Leslie Caron, actress

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MEDICAL EXPERIENCES WITH PROJECT HOPE IN CEYLON*

Promotes Goodwill and Exchange of Technical Knowledge and Skills

MARY D. LEKAS, M.D., of Providence, R.I.
Surgeon, Department of Otolaryngology, Rhode Island Hospital; Consultant, Veterans Administration Hospital, Providence, R.I.

Project HOPE (Health Opportunity for People Everywhere) is a floating American goodwill ambassador which is promoting better world relationships through its teaching and treatment missions. Treatment alone is not enough; through teaching HOPE brings the skills and techniques of the American medical profession to the people of other nations in their own environments. HOPE goes to countries only at the invitation of their medical school or government. Project HOPE is under the sponsorship of the People-to-People Health Foundation, Inc., of Washington, D.C., an independent, non-profit corporation. The idea was conceived by Doctor William B. Walsh (a heart specialist in Washington, D.C.) in 1958—an idea further sanctioned by President Dwight D. Eisenhower. The 520-foot 15,000 ton Navy ship, the U.S.S. Consolation (sister-ship of the U.S.S. Repose) was loaned by the United States Government and re-christened the S.S. Hope. In 1960 she made her maiden voyage to Indonesia and South Vietnam, then to Peru, Equador, Guinea, Nicaragua, Columbia, and now Ceylon. There are no government funds involved in the functioning of the S.S. HOPE — it is leased for $1 per year. A survey team of doctors, nurses, and paramedical personnel is first sent to the country in order to evaluate the area and to enroll a committee of native doctors (1) to select the patients, (2) to assign doctors, nurses, and paramedical technicians to work with the ship when it comes, and (3) to survey the port facilities. The ship is a fully equipped hospital with 150 beds: 2 pediatric units, 2 male and 2 female wards, and an intensive care unit. It has three operating room suites with the most modern equipment, and equally modern laboratories, x-ray department, pharmacy, dental department, physical therapy unit, clinics, audiology, medical records, and dietary department, and last but not least "the Iron Cow." This miraculous machine distils sea water and, when other necessary components are added, produces as much tasty milk as a herd of 2,500 cows; it also makes ice cream. Many children from numerous underdeveloped countries have drunk milk from the Iron Cow. The staff numbers about 135 professional personnel, of whom approximately 35 physicians, dentists, and oral surgeons as well as two chaplains (a Catholic and a Protestant) serve for a two-month rotation period on a voluntary basis. There is also a permanent staff on board which is composed of about 4 to 6 physicians, 1 to 2 dentists, about 48 nurses, about four nurse anesthetists, a hospital administrator, administrative section chiefs, dental hygienists, x-ray and medical technologists, physical therapists, pharmacists, medical record librarians, medical secretaries, medical maintenance men, hearing and speech center workers, and others. The HOPE personnel are integrated into the teaching staffs of the local medical, dental, and nursing schools, hospitals, and health centers.

While the S.S. HOPE is in Ceylon, land-based programs continue in Cartagena, Colombia, Vietnam, Peru, Equador, and Nicaragua. All continuing programs have been requested by the governments of the visited nations to remain after the ship has departed.

Ceylon has been considered as one of the most sophisticated tours of duty for the Project HOPE. All the doctors speak excellent English and have supplemented their medical training in the United Kingdom ("UK" as they call it). After Japan Ceylon claims the highest standard of literacy in Asia. Eighty per cent of the male and sixty-three per cent of the female population are literate.

Over sixty per cent of the Island's population are Buddhist with Hinduism having the next largest following. Christians are next in number (there are many burghers of Dutch origin), and then Muslims.

Most of the Ceylonese believe in the Horoscope and have strong cultural beliefs and superstitions; in fact, several surgical cases were cancelled because it was the "wrong day" for surgery according to the Horoscope! Many of the Ceylonese women refused pelvic examinations because of their strong religious beliefs; cervical cancer is the second most prevalent malignant tumor next to oral carcinoma — the latter because of the chewing of betel nut, lime ($CaCO_3$), and tobacco in combination. Car-

*Presented at a meeting of the Providence Medical Association, at Providence, R.I., November 4, 1968.

cinoma of the esophagus and stomach are also said to be induced by the betel nut mixture. No doubt it is also related etiologically to the cardiovascular problems. It is not uncommon to see young men with gangrenous extremities resulting from arterial disease. Case reports of young men of twenty-two dying of coronary thrombosis are not unusual. The average life expectancy for the Ceylonese is to the mid-forties. Rheumatic heart disease is quite common and unusually malignant. Tuberculosis is the greatest killer in Ceylon. Tropical diseases are a common occurence; malaria, amebiasis, filariasis, and elephantiasis, the usual parasites, and the consequent anemias. Rhinosporodiosis, a fungus disease, is endemic in Ceylon and in India. It usually involves the mucosa of the nose, mouth, and pharynx. Cases of Wegener's granulomatosis were observed with involvement of the hard palate and nasopharynx, followed by necrotizing granuloma of the lower and upper respiratory tract. More pronounced cases are reported with generalized vasculitis of the arteries and veins of the lungs and renal system with resulting decompensation, uremia, and death. Cases of midline lethal granuloma and sarcoma of the maxillary antrum with involvement of the orbit were observed. Several cases of carcinoma of the larynx and a few cases with a hole in the cheek from holding the betel nut combination in this area were also seen. Mastoiditis was found to be quite prevalent, and also resulting brain abscesses. Tetanus from poor hygiene of middle ear infections or other wound areas occurred frequently. A tracheotomy ward was maintained at the Pediatric Hospital (Lady Ridgeway Hospital) for diphtheria cases and for "croup" cases as well. There had been deaths from rabies, because the presence of rabid dogs had been concealed because of religious beliefs against killing animals! There were several cases of caustic burns of the esophagus from the use of strong acids and insecticides for suicidal purposes, especially among the poorer classes.

All types of ear, nose, and throat surgery were performed, even tonsillectomies and adenoidectomies to show our technique, because adenoidal bleeding had been a problem. The cause of the bleeding was the use of nasal intubation for anesthesia, which did not permit complete removal of the adenoidal tissue. The problem was resolved by endoral intubation for general anesthesia.

Nurse anesthetists are not readily accepted. Postoperative recovery rooms and follow-up of patients until the anesthesia has worn off is unheard of. The anesthesia is administered, and then the patient is more or less forgotten. Hospital and operating room cleanliness are not stringent. The hospitals are large (Columbo General Hospital has two thousand beds) and are built primarily for ventilation thus permitting free entry of dust and insects. Occupancy is over one hundred per cent, so that many of the patients either lie on the floor or share beds with other patients. Overcrowding makes cleanliness and good housekeeping difficult to maintain. It is not uncommon to see the hospital laundry drying on the lawn between buildings.

Malnutrition is not as great a problem in Ceylon as it had been on previous Project Hope rotations. Leprosy is not uncommon.

Medical care is free to all people in Ceylon. Many patients are hospitalized for relatively insignificant conditions, and it is sometimes quite difficult to discharge patients when they are well enough to leave. The clinics are also overcrowded, making it difficult for the doctor to do a thorough examination. Often one hundred fifty patients have to be seen by one doctor and one or two house officers. This has to lead to discouragement on the part of the doctors, because of the short-cut methods that have to be followed and in many instances the apathetic attitudes toward any attempts to improve the situation. The overloading problem also applies to the nursing and paramedical personnel. The ENT Clinic is operated under the old English system with black curtains covering the windows; the physicians wear masks and gowns to protect themselves. The Out-Patient Department Clinics are separate from the hospital; and there are throngs of people on the ground on stretchers, many looking terribly ill.

Dentistry is considered an acute problem, because of the great shortage of dentists and preventive or corrective dentistry. Most of the dentistry is confined to the extraction of teeth. The betel nut mixture has also caused a great problem here.

There were no trained cytologists in Ceylon; so vaginal cytology was not being done before we came and introduced it. Our pharmacists encountered difficulties because of the custom of handing to the patient medication in an unlabelled envelope accompanied by verbal instructions. Now, as introduced by our pharmacists, the packets are labelled and the instructions are written.

The rotators have been serving as visiting professors in the medical schools and have helped in curriculum planning. There are two medical schools in Ceylon — one in Columbo (the capital of Ceylon with a population of about 511,000) and the other outside of Kandy (which is about seventy-three miles from Columbo and has a population of about 68,000).

Deafness is a common handicap in Ceylon; therefore, a request for micro-technique ear surgery was made to Project HOPE. The writer was in-

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TRAUMATIC DEFECTS OF THE CRANIUM REPAIRED BY SPLIT RIB CRANIOPLASTY*

Use of Autogenous Material Highly Recommended

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With improvements in medical care more patients are surviving severe head trauma caused by firearms, automobile injuries, and other catastrophes. Some patients survive significant trauma only to be left severely mutilated and isolated from society.

Reconstructive techniques have advanced sufficiently so that repair of large skull defects can be attempted with autogenous tissue.

CASE REPORT

A twenty year old veteran was injured in the Vietnam conflict ten months prior to admission. He had sustained a penetrating missile wound to his right eye and right cerebral hemisphere. The bullet made exit through his right frontal bone with a fragment lodging in his right parietal area. The patient had undergone several operations, including craniotomy with removal of one foreign metallic body from the parieto-occipital area, extensive wound debridement, and a subsequent enucleation of his right eye (Fig. 1, 2). He had been fitted with a plastic space retainer for his right orbit.

The patient presented with complaints of deformity and obvious concavity of the right frontal area extending down the right forehead to the superior orbital rim and depression of the right parietal area.

Neurosurgical evaluation, psychiatric consultation for personality changes, and otolaryngology consultation for hearing loss on the right side were obtained. Following this extensive evaluation the patient underwent a split rib cranioplasty of his right frontal region (Fig. 3,4,5), followed in two months by a split rib cranioplasty of his right parietal region (Fig. 6,7). One rib was removed for each of these procedures, preserving the periosteal bed. The rib was split with a Hall drill, and the pieces were tailored to fit the defect. Lap joints were fashioned to hold the split rib pieces securely to the inner table of the skull using number 34 stainless steeel wire (Fig. 3). The patient's postoperative course was uneventful. Subsequently a right lateral canthoplasty was performed to improve his ability to retain an eye prosthesis.

The patient's personality improved following reconstruction of his cranial defects. He is no longer voluntarily withdrawn from his circle of friends, has renewed his social contacts and interests, and has returned to a gainful employment.

DISCUSSION

Reconstruction of skull defects has been attempted from the late nineteenth century by use of tibial bone grafts. Full thickness rib was first used in 1915 by Kappis.[3] In 1917 Brown of Australia suggested splitting the rib, leaving part intact for protection of the thoracic cavity.[1,2] Costal cartilage, sternum, scapula, and iliac crest have since been used to reconstruct cranial defects.

It is well known that anatomically and physiologically the patient's own tissue results in the best



Fig. 1. Front view of patient prior to cranioplasty. There is a severe depression of the supra-orbital area with distortion of the right eyebrow.

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Fig. 2. Pre-operative view showing the extent of his previous surgery.



Fig. 4. Right lateral view, following right frontal cranioplasty, but prior to right parietal cranioplasty.

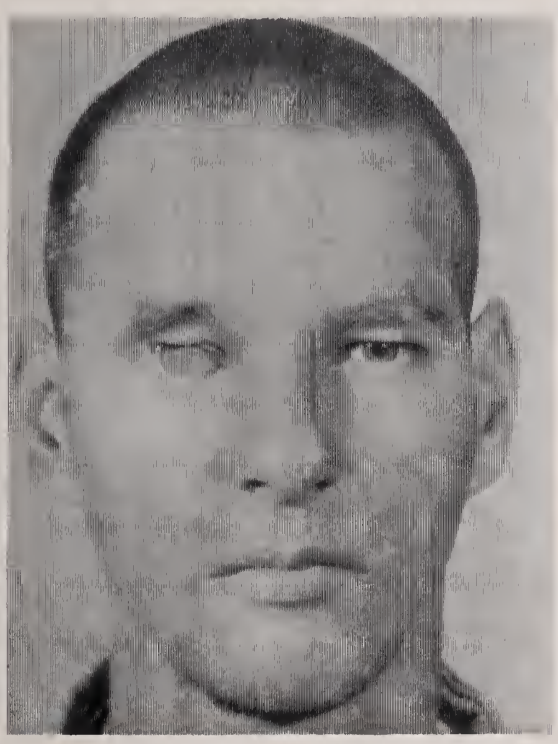


Fig. 3. Front view, following split-rib cranioplasty of the right frontal area.



Fig. 5. Right lateral roentgenogram, showing contoured split-ribs in place in the right frontal area defect.

restoration, since plastics such as lucite, acrylic, and polyethylene and metallic foreign bodies are merely tolerated by the body and never incorporated into the body structure as living growing parts. Renewed interest in autogenous split rib grafts in the reconstruction of extensive defects of the cranium was stimulated by the work of Longacre,[4,5] who performed split rib cranioplasties in the mid 1950's. He showed that, when rib grafts were obtained with care and the periosteum of the rib bed was preserved, the rib would be reconstituted, providing an adequately protective chest

(Continued on next page)



Fig. 6. Right lateral view, following right parietal cranioplasty.



Fig. 7. Right lateral roentgenogram, demonstrating split-ribs in place over the right parietal defect.

wall. The thoracic cage was thus used as an autogenous "bone bank."

The morbidity attending resection as compared to that for resection of similar amounts of bone from the ilium or tibia is low. Autogenous bone grafts are permanent and tolerate infection better than does foreign matter. The use of split ribs for reconstruction of cranial defects is of special importance for patients in whom the original healing process was delayed or complicated by infection. There is a justifiable reluctance to use foreign bodies to reconstruct the cranium in such patients. Bone growth in children in areas of reconstructed cranial defects following split rib cranioplasty has been described as equal to that of the unaffected side.

A team approach involving several surgical disciplines is important in evaluating these patients prior to any prolonged reconstructive undertaking. Our case demonstrates the rehabilitation of a patient with a cranial defect through the use of augenous tissue.

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PROJECT HOPE

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volved in this program. The operating microscope which we used has a side arm objective so that the surgeon's operating technique can be observed for teaching purposes. Deafness from otosclerosis is prevalent in Ceylon. Stapedectomy and replacement with a prosthesis of stainless steel and graft was performed on several occasions. Mastoid surgery and middle ear reconstruction surgery (tympanoplasty) were also performed — and surgery in one case to remove "love grass" from the middle ear. This grass is sometimes used by the natives to scratch the ear or remove wax. It is called "love grass" because it is a place to make love.

In addition to providing the American medical profession with an opportunity to teach the latest techniques in medicine, Project HOPE serves also as a vehicle of rewarding interchange and exchange of technical knowledge and skill.

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Progress Notes—

LACTIC DEHYDROGENASE (LDH) IN CLINICAL MEDICINE

Test Has Value in Diagnosis and Prognosis of Wide Variety of Diseases.

LUIS ARCE, M.D., of Lima, Peru. *Interm, Miriam Hospital, Providence, R.I.*

Lactic dehydrogenase (LDH) has recently shown promise of being useful in the diagnosis and prognosis of certain diseases. It is a glycolytic, intracellular enzyme that catalyzes conversion of pyruvic to lactid acid. It is measured by spectrophotometry and is estimated in units (same as transaminase units) with normal values varying according to laboratory, tissue, or species. The generally accepted source of LDH is metabolically deranged or damaged cells from which it is released into surrounding body fluids and then into serum. Another source, according to some authors, is protein depletion of host tissue by excessive tumor uptake. The normal range in serum is: 200-680 u./ml., being higher in children than in adults. It has been found elevated in miscellaneous clinical conditions, i.e.:

In *acute mycardial infarction* it rises 2-10 times the normal value within 6-12 hours after onset, reaching peak level at 24-72 hours, proportionate to the extent of injury; hence, a 3000 u. reading indicates a poor prognosis. It is useful in smaller infarcts with no significant rise in SGOT levels; however, a single determination is nonspecific. Moderate elevations have been found in 50 per cent of patients with *congestive heart failure and coronary insufficiency.* Interestingly, a similar pattern of LDH rise is found in *pulmonary embolism with infarction.*

Erythrocytes are rich in LDH; therefore, any hemolysis increases LDH levels. Significant elevations are constant in *sickle-cell anemia* and *megaloblastic anemia (pernicious anemia and sprue)*; normal levels return as anemia improves. No elevations are found in iron-deficiency anemia.

High LDH was found in *trauma to striated muscle* (accidents, surgery, muscular dystrophy) proportionate to the amount of tissue injury, but not in neurogenic muscle atrophy.

In *liver disease* data are equivocal, with transient elevations in *hepatitis* and a variable rise in *cirrhosis.* Generally, it is not elevated in *inflammatory processes* and is inconsistently high in *infectious mononucleosis.*

In *renal disease* LDH rises in *renal necrosis, infarction,* and *acute or chronic nephropathies.* There is a good correlation with evolution and regression of disease; hence, it is a useful guide for tumor growth.

LDH has it most significant value in *neoplastic disease.* Elevations up to 15 times the normal value have been found in 20-50 per cent of patients with *malignant tumors,* mostly disseminated adenocarcinomas; the LDH level rises in direct relation to tumor growth and drops with tumor regression. In *leukemia* (acute and chronic myelogenous leukemia) the LDH level generally correlates with the number of *circulating leukocytes.* As a rule, lymphatic leukemia is not associated with LDH rise. LDH is elevated in about 50 per cent of patients with *malignant lymphoma,* with levels 4-5 times normal, especially in the presence of hepatic involvement.

LDH has also been measured in *effusion fluids,* i.e., *pleural and peritoneal exudates,* being lower than serum content in non-neoplastic conditions (cirrhoosis, congestive heart failure), but higher with malignant tumor involvement. The increased ratio of LDH in fluid/serum reverts to normal with treatment, and indicates the presence or absence of malignant tissue with high accuracy.

In *spinal fluid* normal LDH is 40 u./ml.; it remains normal in patients with cancer not involving the central nervous system (CNS) or in those without CNS disease, but is extremely high in malignant tumor involvement of the CNS (reaching as high as 20 times normal), moderately high in *cerebro-vascular accidents* (Subarachnoid hemorrhage, thrombosis, and meningitis), but normal in *primary brain or meningeal tumors,* thus helping to distinguish between primary and metastatic tumors of the CNS.

Immunologic experiments in animals show that the anti-serum of chickens injected into rabbits inhibited 80 per cent of muscle LDH, 70 per cent of liver LDH, 32 per cent of serum LDH, and 9 per cent of heart LDH. This degree of inhibition remained until serum LDH returned to normal. Some authors speculate that LDH inhibition, if

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WORKMEN'S COMPENSATION MEDICINE*

Laws Have Established Right to Pecuniary Relief From Results of Injury at Work.

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The desire for security when the disaster of a serious accident or illness has befallen is not a new feeling. Group action to provide medical benefit "insurance" in this country can be traced back to mutual benefit associations, employee benefit associations, and fraternal societies, some of which date back to 1851. For the most part, their primary interest was in providing financial assistance in the event of death or disability. The inadequacy of this approach became apparent in the social and economic revolution of late nineteenth century European society. The concept that labor was an essential element in the machinery of industry and was subject to the same problems of depreciation, destruction and repair, was developed. The burden of the maintenance of the labor force was felt to be that of industry, just as it had always been with the maintenance of physical equipment. The cost of work injuries and their sequelae were considered part of the cost of production.

The first workable law giving substance to this philosophy was the sick insurance statute in Germany in 1883. By 1903 this concept of compensation to the needy employees or their survivors resulting from disability or death arising directly out of employment had spread throughout Europe.

Workmen's compensation laws were developed to remedy inadequacies stemming from common law and employer's liability statutes by providing laws based upon the principle of insured liability without regard to fault on the part of either employer or employee.

Under the common law, the injured employee had to sue his employer in order to recover damages. Not only was this often too expensive for the employee, but the advantage was in behalf of the employer who could avail himself of thre common law defenses:

1. *Assumption of risk*: In accepting the job, the employee had accepted the ordinary risks and such risks were his own responsibility.

2. *Fellow-servant rule*: The employer was not responsible for injuries caused by a fellow-employee.

3. *Contributory negligence*: Not only was it the burden of the employee to prove that his employer had been negligent, but he had to prove his own freedom from negligence. Any contributory negligence, even slight, could nullify the employer's negligence.

The enactment of Employers' Liability Acts lessened the severity of the defenses which the employer could use, but the burden was still on the employee to bring suit against the employer and prove his negligence.

Workmen's compensation law established the *right* of the injured workman to the pecuniary relief from the results of injury at work unless his own wilful act was the proximate cause, regardless of fault and with a minimum of legal formality.

Workmen's compensation law in this country began in 1908 when the Federal Government passed an act covering certain civil employees. State laws became effective in 1911 and spread throughout the country rapidly. Compensation law was protested by certain groups as an invasion of the property rights of the employer and hence contrary to the letter and spirit of the Fourteenth Amendment of the Constitution of the United Sates. Both the Maryland law of 1902 and the Montana law of 1909 were declared unconstitutional. The New York law of 1910 met the same fate until the passage of an amendment to the State Constitution in 1913. In 1917 the United States Supreme Court passed favorably on the constitutionality of the legislation, beginning an era of the enactment of similar social legislative acts across the country. In addition to that in all the states, Federal legislation was also passed, the Longshoremen's and Harbor Workmen's Compensation Act.

Although Workmen's Compensation laws are universal in the United States with many provisions in common, there are nevertheless great variations in the individual state laws. This lack of uniformity requires that each physician must familiarize himself with the law in his own area of practice. With over two million workers injured annually in the course of their employment, ac-

*This is the first of a projected series of papers describing the nature and operation of the Workmen's Compensation laws.

counting for approximately 42 million man-days of disability, a significant element in medical practice is represented, demanding a better understanding of the compensation process.

Variations in the basic law occur in the following general areas: coverage, benefits, and financing and administration. Detailed analyses are available from the United States Department of Labor and will be only briefly summarized.

Coverage refers to the fact that laws differ in their inclusiveness. This can involve not only persons and employments but also the injuries covered. Many states require coverage (compulsory coverage) while others allow election not to be covered. In the latter case, the employer loses the customary common law defenses. Categories of employment can be exempt, such as less than a stated number of employees, farm workers, domestic workers, and employees of charitable organizations. In most states the employments that are exempted from compulsory or elective coverage may be brought under the law voluntarily. Unlike elective coverage, the employer who does not voluntarily come under the law does not lose his common law defense.

The usual definition of a compensable injury is one "arising out of and in the course of employment." It is generally accepted that disability through an occupational disease or any injury arising out of employment and due to causes and conditions characteristic of, and peculiar to the particular trade, occupation, process, or employment, and excluding all ordinary diseases to which the general public is exposed, is entitled to the same benefits as an accidental injury. Variations in the coverage of occupational diseases are many and complex, and the individual state law should be consulted when this question arises.

Election of coverage can also refer to the employee. Although the employee rarely elects not to be covered, there are situations when he may wish to do so. In the case of an injury by the negligence of a third party, not his employer or fellow employee, he may elect to sue for damages in court. Should he elect to be covered by Workmen's Compensation, the right-of-action against the third party is surbrogated (transferred) to the employer.

Benefits under Workmen's Compensation include payments for medical services, benefit payments to the worker during the period of disablement and for permanent disabilities, death benefits, and burial allowances.

Medical benefits are furnished to the injured workman through his own choice of physician, through choice from a panel, or through choice by the employer. In some states there is no limit in benefits, whereas in others there are limitations with respect to period of time, or cost, or both.

Disability benefits depend upon a rate set by the law in relationship to the degree of disability. The rate is usually a percentage of wages with a stated maximum weekly amount. Maximum periods during which compensation may be paid will also vary. There is usually a waiting period or period of disability after the injury that must elapse before the payment of compensation indemnity benefits is required. The degree of disability is usually determined by the reporting physician, and his terminology should be correct so that the proper benefits can be determined. The majority of cases involve temporary total disability, that is, the employee is unable to work at all while recovering from the injury, but is expected to recover fully. Payments are usually decreased when the disability becomes partial and the injured employee is able to return to some form of work.

Permanent disability may also be either total or partial. Persons having a permanent total disability are presumed to be unable to work at all or are unable to work regularly in any well-known branch of the labor market.

A permanent partial disability means that a worker has a permanent injury, but is not completely disabled. If he cannot return to his regular job, he can often do, or be trained to do, other types of work. In many states it has been recognized that in addition to the medical rehabilitation or restoration of lost function, a vocational restoration is required. Benefits to provide economic adjustment through vocational training, counseling, and selective placement are provided. There are two classes of permanent partial disabilities: "scheduled" injuries, or those specific injuries or those specific injuries listed in the law, such as amputations or losses of other parts of the body, and "non-scheduled" injuries, which are those of a more general nature. Here, too, it is important that the physician be specific in his report, so that the proper benefits can be determined.

Death and burial benefits provide for the families or other persons who have been dependent upon the deceased workman. Financing varies from private insurance, to state funds, to self insurance. These systems may be used exclusively or competitively.

Supervision of Workmen's Compensation law is in most states an administrative function carried out by an independent Workmen's Compensation agency or by the same department which administers other general labor laws. In a few states it is

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RHODE ISLAND PHYSICIAN NATIONAL OFFICER

At the twenty-first annual meeting of the American Association of Blood Banks, held in Washington, D.C. in October, Dr. Enold H. Dahlquist, Jr., of Providence, was named President-elect to succeed Dr. Frank C. Coleman of Tampa, Florida, next year as head of the 5,000 member medical organization.

Dr. Dahlquist is Associate Pathologist and Associate Director of the Blood Bank of the Rhode Island Hospital. He will head the organization of community and hospital blood banks in 1969-70 taking office at the next annual meeting at the Shamrock Hilton Hotel, Houston, Texas, November 16-22, 1969.

Dr. John B. Henry of Syracuse, New York, was elected Vice-President. Dr. William G. Battaile of Washington, D.C. was re-elected Secretary and Mrs. Bernice M. Hemphill of San Francisco was re-elected Treasurer.

Elected Directors were: Dr. Theodore Robertson, Glen Cove, New York; Dr. Morten Grove-Rasmussen, Boston; Dr. Richard H. Walker, Memphis, Tennessee; Dd. Ruth M. Dalton; LaCrosse, Wisconsin; John N. Kemp, Austin, Texas; Dr. William A. H. Rettberg, Denver, Colorado.

Dr. Dahlquist was born in Cranston, Rhode Island, and is a graduate of Brown University and Tufts University Medical School. He was a Medical Corps Captain in the Air Force in Hawaii. He is a former President of the New England Transfusion Society and is Chairman of the Blood Bank Committee of the Rhode Island Medical Society. He and Mrs. Dahlquist, the former Ann Moran of Central Falls, Rhode Island, and their six children, live in Glocester Township in a farmhouse built in 1740.

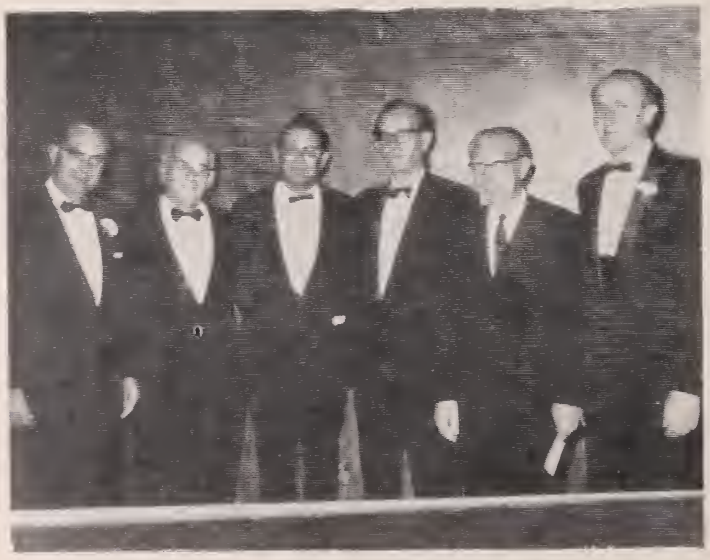
LANDSTEINER AWARD PRESENTED

Prof. Rodney R. Porter, Whitley Professor of Biochemistry at the University of Oxford, England, received the $1,000 Karl Landsteiner Memorial Research Award of the American Association of Blood Banks at the organization's 21st annual dinner at the Shoreham Hotel, in Washington, D.C., on October 30.

Present was Dr. Ernest Landsteiner of Providence, Rhode Island, son of the scientist born in Austria 100 years ago whose discovery of the A, B, and O blood types made transfusion practical and earned him the 1930 Nobel Prize in Medicine and Physiology.

Also present were three of his associates in important research, Dr. Philip Levine, Dr. Alexander Wiener, and Prof. Merrill W. Chase. Earlier in the day, Professor Chase of Rockefeller University, New York, paid tribute to the Karl Landsteiner achievements and said his coming to America was "the resurrection of a scientist" that launched him on a second career.

Dr. Frank C. Coleman of Tampa was presented as 1968-69 President by Dr. John A. Shively of the University of Missouri, retiring Association President who gave its $500 John Elliott Memorial Award to Dr. E. Eric Muirhead of Memphis, Tenn., and the $500 Ivor Dunsford Memorial Award to Mrs. Jane Swanson of Minneapolis.



With his son, Dr. Ernest Landsteiner of Providence, R.I., present, the 100th anniversary of the birth of Karl Landsteiner was hailed at 21st convention of the American Association of Blood Banks at Washington, D.C. Left to right are Dr. Frank C. Coleman, AABB President; Dr. Philip Levine, Dr. Landsteiner, Prof. Rodney R. Porter of Oxford University, recipient of the Association's Karl Landsteiner Memorial Research Award; Dr. Alexander Wiener, and Dr. John A. Shively, retiring AABB President. Drs. Levine and Wiener were research associates of Karl Landsteiner whose discovery of blood types made transfusion practical and opened new worlds to the surgeon.

Editorials

MORE ON THE PREROGATIVE OF FREE CHOICE

With the further progress in the Rhode Island area toward the development of Group Health Association of Rhode Island, a prepayment plan providing a closed panel type of comprehensive care sponsored by AFL-CIO, it is important, as we have pointed out before in these columns, that the need for free choice at some level be provided for. The proper place for this free choice should be between this plan and some other allowing free choice of physician, such as Rhode Island Medical Society Physicians Service. This is particularly important at a time when the local Blue Shield plan is preparing a comprehensive care system providing for free choice of physician and payment of usual and customary fees. Such a plan will be available after January 1, 1969.

That the Federal authorities, despite their interest in promoting group health plans, believe in this type of free choice is evidenced by the following statement in an HEW publication:

"In one important sense . . ., a prepaid group practice health plan based on block memberships can and must be truly voluntary if it is to succeed: Within each population of potential subscribers, each individual must be allowed a dual choice of health plans. The person who does not like the group-practice, prepayment plan must be given a fair opportunity to opt for another type of coverage. Only free choice between alternative health insurance schemes can produce a wholesome group of satisfied, loyal subscribers.

"The education of union leaders, union members, and employers concerned with CHF (Community Health Foundation of Cleveland, Ohio), about this indispensable concept required much time and the work of highly trained expositors. Union leaders and active union members were convinced by theory and experience that majority rule is essentially right. They tended to consider dual choice a significant deviation from union policy. Management feared that the extra administrative work involved in dual choice would increase costs.

"The administration of dual choice is actually simple, and entails no significant costs in any of the numerous places where it has been routinely offered — California, Hawaii, and elsewhere. The alternative plans are explained to the prospective subscriber when enrollment is first discused. Dual choice is again offered at set intervals (as on a specific date annually). Those who wish to change may do so on that date. The choice stands until the next option date.

"The benefit of dual choice to the individual is obvious from the start. The premium-paying organization learns with experience that dual choice offers an alternative to dissatisfied individuals and provides a continuous opportunity to compare costs and performances of systems."

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[1]Studies in Medical Care Administration: Planning and Implementation of the Community Health Foundation of Cleveland, Ohio. U.S. Department of Health, Education, and Welfare, Public Health Service, Division of Medical Care Administration. Public Health Service Publication No. 1664-3, April 1968.

A WORLD-WIDE PROBLEM

The 28th International Congress on Alcohol and Alcoholism held hecently in Washington, D.C., was the most elaborate, well-attended congress on alcohol ever held anywhere in the world. Its timeliness and importance lie in the growing concern about this global problem. The meeting directed attention to all phases of the problem, giving consideration to varied and sometimes novel methods of combating the menace. Clergy, psychologists, and social workers attended and participated in the meetings, which gives emphasis to the growing concern about the social and moral issues. Attempts to explain the church's role in combating alcoholism were somewhat acrobatic, but the healthy exchanges of views contributed to understanding.

The degree of emphasis on treatment varied from country to country. All sorts of legal maneuvers were used to control the public health and safety aspects of this multi-billion dollar industry.

With regard to the educational approach there was a lack of uniformity or agreement as to how, when, where to present what to whom. That alcohol, C_2H_5OH, is still the cause and man the victim of his own lack of willpower to control his drinking cannot be denied; yet the arguments go on. Some believed that teaching young people to drink would lessen the problem.

Research has made some very remarkable strides in elucidating the causes of alcoholism and demonstrating its harmful effects on the habitual user. Much more remains to be done. Why not a thorough study on the total abstainer, his motivation, attitudes, psychodynamics? The abstainers form a sizable minority that could be a source of vital information for another International Congress on Alcohol and Alcoholism.

This valuable international exchange of view-

(Continued on next page)

points on a serious disease entity exemplifies the importance and usefulness of the international conference as a practical mechanism for breaking down international cultural and scientific barriers.

SOLID WASTE DISPOSAL

Published elsewhere in this issue is an excellent paper on solid waste disposal by Austin Daley, Chief of the Division of Air Pollution Control of the Rhode Island State Department of Health and an outstanding public servant. This essay deserves the careful attention of our readers.

Organized medicine in Rhode Island has long worked in the vineyard of pollution. Air and water pollution was for a generation a particular concern of the Providence Medical Association, and many of the advances in these fields in Rhode Island can be attributed, certainly to a considerable measure, to the determined efforts of the devoted and persistent gadflies who headed these committees.

Doctor George K. Boyd, currently Chairman of the Pollution Control Committee of the Rhode Island Medical Society, urges the grass-roots concern of Rhode Island doctors in these pressing problems. He points out that dumps are still burning (as so graphically shown in the illustrations accompanying Mr. Daley's paper) despite a state law banning such procedures as of July 1, 1968.

We vigorously support the Committee in its activities. We further bespeak the support of physicians throughout the state, and especially physicians in those communities which are the worst offenders, in bringing about the abatement of these nuisances.

LOCALIZATION OF ALDOSTERONOMA BY ADRENAL VEIN CATHETERIZATION

As described by Conn in his classical studies, hyperaldosteronism is characterized by hypertension, hypokalemia, increased plasma renin, and elevated aldosterone excretion or secretion. All patients with this disorder exhibit a temporary clinical response to administration of an aldosterone antagonist (spironolactone). In mose obscure cases the serum potassium may be within normal limits. Most cases of primary aldosteronism are associated with unilateral benign adrenal tumor. In only 5 to 10 per cent of cases are bilateral tumors present, and even more rarely is bilateral adrenal hyperplasia without tumor the cause of primary aldosteronism. Because of the small size of some of the tumors, careful inspection and palpation in situ may be completely unrewarding. To overcome this difficulty Nesbit, the surgical member of Conn's team, had worked out a bilateral approach with progressive sampling of first the left gland, and then the right, leading at times to bilateral subtotal removal of the adrenals before a tiny tumor was revealed.

Silen in 1966 reported the measurement of aldosterone concentration in the adrenal venous blood from both sides in six patients during operation for aldosteronoma. The smallest difference in concentration between the two sides was twofold. Melby, working with Egdahl, described a method of adrenal vein catheterization through the femoral vein permitting collection of separate samples from the two veins and differential analysis of the samples for aldosterone by a chromatographic technique.

Egdahl has now reported 8 cases in which differential preoperative catheterization of the adrenal vein for aldosterone measurement showed a clear-cut localization in every case. The offending adrenal was removed directly in each instance. In the final six cases a unilateral approach only was used without troubling to visualize the opposite gland. In two cases the tumor could not be felt, but the level of confidence was so high that no effort was made to explore the contralateral gland. All 8 cases were cured by unilateral adrenalectomy.

This important development simplifies greatly the diagnosis and localization of aldosteronoma. A significant difference in aldosterone concentration can be expected in every case of unilateral tumor. Adrenal vein catheterization may spare the patient a bilateral adrenalectomy if the tumor is too small to palpate, or damage to the remaining gland where partial resections or traumatic manipulation of the single remaining gland might otherwise be necessary. The procedure should be adopted in all clinics where the appropriate venous catheterization and chemical analytical methods are available. Egdahl concludes that the differential measurement of aldosterone in venous blood obtained by preoperative percutaneous adrenal vein catheterization is a definitive method for confirming the diagnosis and localizing the tumor in hyperaldosteronism.

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L-FORMS

It was queer that the disease *primary atypical viral pneumonia,* of all the "virus" diseases, responded to an antibiotic. Everything about this disease from the causative agent to the terminology was, and continues to be, unusual. We now know that the very microorganism responsible for this disease, known as the *Eton agent,* is an unusual form of bacterium called the L-form.

This term means *Lister form,* from the *Lister Institute* in London. There is a peculiar anatomical alteration in bacteria which was first noted by Doctor Emmy Kleineberger-Nobel over thirty years ago when working there. These tiny organisms were noted by the discoverer growing in a culture of Streptobacillus moniliformis. They resembled in size and behavior organisms already known to be the causative agent of pleuropneumonia in cattle. On subsequent cultures these could be shown to revert to the more easily recognizable conventional bacterial form. The question was properly raised as to whether or not the L-forms were but a metamorphosed phase of bacteria. Many species of bacteria can be changed to this L phase by varying the culture media with the addition of amino acids or antibiotics. On the other hand some L-forms seems to be extremely stable and incapable of any conversion. It may be that to date microbiologists have been unable to discover a converting agent. The model for such a predicament is easily recalled in the invertebrate field by the classic experiment of Julian Huxley, in which he metamorphosed alloxtal to a heretofore unknown animal by affecting a metamorphosis with thyroxine.

In addition to the disease atypical pneumonia, several chronic infections may be due to L-form variants. There is considerable evidence that Whipple's disease, aphthous stomatitis, and even some forms of myocarditis are due to these organisms.*

As so frequently happens in science, clarification of one question—such as why an antibiotic worked in a presumably viral disease—has opened up an entirely new area for investigation, and in this instance new concepts in the biology of bacteria. With the increasing evidence for the role of viruses in cancers and increasing evidence of more diseases being caused by L-forms, we may well be coming full circle again with emphasis on the "germ theory" of disease. Hopefully, a new and enthusiastic young group of microbiologists will pursue these intriguing leads.

*Recently W. A. Altemeier of Cincinnati appears to have incriminated an L-form bacteremia in certain cases of acout spontaneous or "idiopathic" thrombophebitis.... Editor

MADELAINE RAY BROWN, M.D.

Our Library has received a magnificent gift of one hundred and twenty-eight volumes from the collection of the late Doctor Madelaine R. Brown of Cambridge, Mass. The value of the bequest may be judged from the names of some of the authors — Morgagni, Boerhaave, Paré, Osler, Charcot, Hales, della Porta, Swammerdam, Auenbrugger, Fracastorius — all of them veterans of Garrison-Morton, book dealers' catalogues and other rare book sources.

Doctor Brown was a "devoted daughter of Rhode Island" according to her friend and associate of many years, Doctor Helen Sinclair Pittman, so it is not strange that we were chosen to provide a home for her treasured volumes. Members of her family live in Providence and she has many friends here.

Madelaine Brown's career is a lesson in courage. She is reported to have said of her illness,[1] "I'm not heroic. I get up to escape boredom. There are two ways of meeting this thing. One way is to go to bed and not move out for the rest of your life. The other way is just to do your best." That her best was very good indeed is shown by her many honors. Quoting the Elizabeth Blackwell Citation,[2] "She is co-author of the first published description of the syndrome of muscular paralysis due to kidney disease. The New York Infirmary hereby makes this citation of Dr. Madelaine Ray Brown in recognition of her distinguished achievements in research and in the practice and teaching of neurology. Dr. Brown's unfailing good humor, superb courage, and truly Oslerian equanimity have made

(Continued on next page)



MADELAINE RAY BROWN, M.D.

her an inspiration to all who have come in contact with her."

The following obituary, reprinted by permission of the Editor of the New England Journal of Medicine, records the life of a very brave lady.

HELEN DEJONG

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[1]Evening Bulletin, November 15, 1957
[2]J. Amer. Med. Wom. Ass. 9:198-9, June 1954
from the NEW ENGLAND JOURNAL OF MEDICINE, Volume 279, October 10, 1968

MADELAINE RAY BROWN, M.D.

MADELAINE RAY BROWN died on June 15, 1968, from injuries sustained when the car in which she was a front-seat passenger left the road and struck a tree. Dr. Brown was born in Providence on September 19, 1898. She received her B.A. from Bryn Mawr College in 1920, her M.A. from Brown University in 1923 and her M.D. from Johns Hopkins in 1927.

While in Medical School she read Ranson's *Text Book of Neurology* and thereupon decided to follow that specialty. It is of some interest that her fascination with neurology antedated by several years the appearance of her own neurologic disease.

In February, 1928, while she was an intern at the University Hospital in Ann Arbor retrobulbar neuritis developed. She had spent the previous evening diving in a pool; the diagnosis made was "hysteria." Before starting her assistant residency, on the service of Dr. Foster Kennedy at Bellevue Hospital, she worked as clinical clerk for Dr. Gordon Holmes at Queen's Square in London; it was there that she learned that retrobulbar neuritis is usually the herald of multiple sclerosis. Returning to New York, she completed a residency in neurology, then came to Boston City Hospital, where she became, under Dr. Stanley Cobb, the first woman house officer.

The first overt manifestation of multiple sclerosis appeared early in 1929. Thereafter, for close to 20 years she had recurrent attacks of monoplegia or diplegia followed by sufficient return of function after each that she was able to play golf, tennis, to swim and dive and to learn to ski.

Dr. Brown started practice in Boston in 1931, working first at the Boston City Hospital and then at the Massachusetts General, where she went on to hold appointments as neurologist, and as clinical associate in neurology at Harvard Medical School. She continued her teaching and ward visiting to the age of 65. She was chief of neurology at Mount Auburn Hospital in Cambridge, and consultant in neurology to the New England Hospital in Roxbury.

She was a diplomate, in neurology, of the American Board of Psychiatry and Neurology, a fellow of the American College of Physicians and a member of the American Neurological Association. In 1945 she was president of the Boston Society of Neurology and Psychiatry; for a number of years she was a councilor from the Middlesex South District of the Massachusetts Medical Society. She was the author of numerous papers on neurologic subjects.

From 1947 on the progress of her disease was relentless and by the early 1950's advanced to quadriplegia. She received an Elizabeth Blackwell Award in 1954, was named Woman of the Year by the New England Women's Medical Association in 1957, and in 1960 was honored by a citation at the 75th Anniversary Convocation of Bryn Mawr College.

Her distinguished collection of old medical books has gone to the Library of the Rhode Island Medical Society. Dr. Brown was also a recognized authority on American pewter, and had an outstanding collection of that made by Rhode Island pewterers; this is now the property of the historical societies of Providence and Newport.

Dr. Brown never lost her courage nor her interests in medicine and life. She was scheduled to have gone to Washington on June 16 to a meeting of the American Neurological Association. She is survived by a brother, four nieces and several grandnieces and nephews.

HELEN SINCLAIR PITTMAN, M.D.

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(Concluded on Page 757)

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Contraindications—Thrombophlebitis, thromboembolic disorders, cerebral apoplexy or a past history of these conditions, markedly impaired liver function, known or suspected carcinoma of the breast, known or suspected estrogen-dependent neoplasia, undiagnosed abnormal genital bleeding.

Warnings—Watch for the earliest manifestations of thrombotic disorders (thrombophlebitis, cerebrovascular disorders, pulmonary embolism, retinal thrombosis); if present or suspected discontinue the drug immediately.

British studies reported in April 1968[1,2] estimate there is a seven- to tenfold increase in mortality and morbidity due to thromboembolic diseases in women taking oral contraceptives. In these controlled retrospective studies, involving 36 reported deaths and 58 hospitalizations due to "idiopathic" thromboembolism, statistical evaluation indicated that the differences observed between users and non-users were highly significant. The conclusions reached in the studies are summarized in the table below:

Comparison of Mortality and Hospitalization Rates Due to Thromboembolic Disease in Users and Non-Users of Oral Contraceptives in Britain.

Category	Mortality Rates		Hospitalization Rates (Morbidity)
	Age 20-34	Age 35-44	Age 20-44
Users of Oral Contraceptives	1.5/100,000	3.9/100,000	47/100,000
Non-Users	0.2/100,000	0.5/100,000	5/100,000

No comparable studies are yet available in the United States. The British data, especially as they indicate the magnitude of the increased risk to the individual patient, cannot be applied directly to women in other countries in which the incidences of spontaneously occurring thromboembolic disease may differ.

Discontinue medication pending examination if there is sudden partial or complete loss of vision, or sudden onset of proptosis, diplopia or migraine. Withdraw medication if papilledema or retinal vascular lesions are found.

Since the safety of Ovulen in pregnancy has not been demonstrated, it is recommended that pregnancy be ruled out for any patient who has missed two consecutive periods before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule the possibility of pregnancy should be considered at the first missed period.

A small fraction of the hormone agents in oral contraceptives has been identified in the milk of mothers receiving these drugs. The long-range effect to the nursing infant cannot be determined at this time.

Precautions—Pretreatment physical examination should include special reference to the breasts and pelvic organs, and a Papanicolaou smear.

Endocrine and possibly liver function tests may be affected by Ovulen. Therefore, it is recommended that such tests if abnormal be repeated after the drug has been withdrawn for two months.

Pre-existing uterine fibromyomas may increase in size under the influence of progestogen-estrogen preparations.

Because these agents may cause some degree of fluid retention, conditions which might be influenced by this factor, such as epilepsy, migraine, asthma, cardiac or renal dysfunction, require careful observation.

In breakthrough bleeding, and all irregular vaginal bleeding, consider nonfunctional causes. Adequate diagnostic measures are indicated in undiagnosed vaginal bleeding.

Carefully observe patients with a history of psychic depression and discontinue the drug if severe depression recurs.

Any possible influence of prolonged Ovulen therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study.

A decrease in glucose tolerance has occurred in a significant percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be observed carefully while receiving Ovulen.

Because of the effects of estrogens on epiphyseal closure Ovulen should be used judiciously in young patients in whom bone growth is not complete.

The age of the patient constitutes no absolute limiting factor, although Ovulen therapy may mask the onset of the climacteric.

The pathologist should be informed of Ovulen therapy when relevant specimens are submitted.

Adverse Reactions—A statistically significant association has been shown between use of oral contraceptives and the following serious adverse reactions: thrombophlebitis, pulmonary embolism.

Although available evidence is suggestive of an association, such a relationship has been neither confirmed nor refuted for the following serious adverse reactions: cerebrovascular accidents, neuro-ocular lesions, e.g., retinal thrombosis and optic neuritis.

The following adverse reactions are known to occur in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms (such as abdominal cramps and bloating), breakthrough bleeding, spotting, change in menstrual flow, amenorrhea during and after treatment, edema, chloasma or melasma, breast changes (tenderness, enlargement, secretion), change in weight, changes in cervical erosion and cervical secretions, suppression of lactation when given immediately post partum, cholestatic jaundice, migraine, allergic rash, rise in blood pressure in susceptible individuals, mental depression.

Although the following adverse reactions have been reported in users of oral contraceptives, an association has been neither confirmed nor refuted: anovulation post treatment, premenstrual-like syndrome, changes in libido, changes in appetite, cystitis-like syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme and nodosum, hemorrhagic eruption, itching.

The following laboratory results may be altered by oral contraceptives: hepatic function: increased sulfobromophthalein and other tests; coagulation tests: increase in prothrombin, Factors VII, VIII, IX and X; thyroid function: increase in PBI and butanol extractable protein bound iodine, and decrease in T^3 uptake values; metyrapone test; pregnanediol determination.

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HEALTH CARE PRICES

The health care component of the Consumer Price Index includes professional services, hospital services and over-the-counter drugs and pharmaceuticals (see table). From 1950 to 1965, health care prices rose 66.6 per cent. This increase was of a greater magnitude than the increases experienced by any other major component of the Consumer Price Index. The "health care" component of the CPI increased 20.7 per cent in the first half and 22 per cent in the second half of the 1950's. From 1960 to 1965, health care prices increased 13.1 per cent, a lower rate than that of the previous decade. During the same five-year period, health care prices experienced an average annual increase of 2.5 per cent, a higher rate of increase than that experienced by the all-services and all-goods categories of the CPI.

This trend was interrupted in 1966 when health care prices rose by 4.4 per cent. The upward movement of health care prices continued into 1967 with a 7 per cent increase. This was the largest annual advance since 1950 and was mainly the result of increases in hospital service charges, which rose more rapidly than any other item. From 1950 to 1965, hospital service charges increased 165.2 per cent. The annual increase in this period ranged from a high of 10.9 per cent to a low of 4.8 per cent. From 1960 to 1965, hospital charges rose annually at an average rate of 6.3 per cent. In 1966, a 9.6 per cent increase was recorded, only to be surpassed by a 19.1 per cent increase in 1967.

Since 1950, the health care industry has experienced consistent increases in the quantity and quality of care demanded by consumers. Some of the factors which contributed to this rise in demand are population growth and changes in its age and race distribution, increased education and sophistication by consumers regarding health care, and the ability of the medical profession to provide more and better services. Of more importance, however, are factors which enabled buyers to translate their wants in demand.

As disposable personal income increased, many consumers found it easier to afford health care services, while insurance coverage and government subsidies increased the ability of larger segments of the population to purchase health care.

Due to increased demand and a relatively fixed supply of health resources, it became more difficult to secure an appointment with a doctor and more difficult to enter a hospital, and it became usual for physicians to work 60 to 80 hours per week in order to provide patient care. The need for an expansion of output is obvious. The indus-

—Percentage Change for Health Care Items From "Consumer Price Index," 1950-1967*

	1950-1955 % Change	1955-1960 % Change	1960-1965 % Change	1960-1961 % Change	1961-1962 % Change	1962-1963 % Change	1963-1964 % Change	1964-1965 % Change	1965-1966 % Change	1966-1967 % Change
Total health care	20.7	22.0	13.1	3.0	2.6	2.5	2.1	2.4	4.4	7.0
Physicians' fees	18.4	17.8	14.6	2.6	2.9	2.2	2.5	3.6	5.8	7.1
Dentists' fees	14.2	12.5	12.3	0.5	2.7	2.9	2.6	3.2	3.2	5.0
Hospital daily service charge	43.6	35.8	36.0	7.6	7.0	6.3	5.0	5.8	9.6	19.1
Prescriptions	9.7	13.5	—11.5	—3.3	—3.9	—2.4	—1.3	—1.1	—0.2	—1.8

*1957-1959=100. Computed from Consumer Price Index: Price Indexes for Selected Items and Groups: Annual Averages, 1935-61, U.S. Bureau of Labor Statistics, Sept. 1962, pp 10, 11. Consumer Price Indexes for Selected Items and Groups: December 1960 to December 1962, U.S. Bureau of Labor Statistics, March 1963, pp 5, 6. Consumer Prices Indexes for Selected Items and Groups: December 1963 to December 1964. U.S. Bureau of Labor Statistics, p 8. Consumer Indexes for Selected Items and Groups: December 1965 to December 1967, U.S. Bureau of Labor Statistics p 6.

try reacted with increases in manpower, facilities, and productivity; but the transition has been difficult. Many institutional, financial, and organizational obstacles prevented an adequate adjustment of supply to demand. This imbalance forced health care prices to rise as affluent consumers competed among themselves for the limited quantity of services.

When attempting to make an objective evaluation of a statement based on Consumer Price Index data, one point to remember is that the profile of each component in the CPI is precisely defined. . . . The category medical-care services, however, which contains such items as physicians' fees, prescriptions, dispensing of eyeglasses, hospital service charge, laboratory fees, and health insurance overhead costs, obviously does not give an accurate description of the trend in physicians' fees. Yet it is sometimes used for this purpose.

Therefore, this category should be renamed "health care services" to avoid confusion and to differentiate between fees for medical (or physician) services and the fees for the conglomerate health services described above.

("Health Care Prices, 1950-1957," in *Journal of the American Medical Association,* July 22, 1968).

COLLOQUIUM ON MENTAL HEALTH IN AN URBAN SOCIETY SCHEDULED

A three day colloquium dealing with various aspects of mental health in an urban society, sponsored by Butler Hospital, will be held on May 22, 23 and 24, 1969 as one of the major highlights of the hospital's 125th anniversary celebration. Announcement of the conference was made recently by Dr. Joseph J. Baker, superintendent and physician in chief of the local hospital.

Among those already scheduled to take part in the conference are Dr. Walter E. Barton, Medical Director of the American Psychiatric Association; Dr. Lawrence C. Kolb, President of the American Psychiatric Association; Dr. Stanley F. Yolles, Director of the National Institute of Mental Health, and Dr. Nicholas Hobbs, recent past president of the American Psychological Association.

Approximately 300 psychiatrists and behavorial scientists are expected to attend the meeting.

RHODE ISLAND GASTROENTEROLOGY SOCIETY MEETING

The Rhode Island Gastroenterology Society held a meeting at the Old Canteen in Providence on October 16 at which Dr. John Ross, director of gastroenterology at the Lahey Clinic, Boston, spoke on "Small Bowel Disease and Related Disorders." A large turnout of surgeons and roentgenologists joined with members of the Society for the lecture.

(Continued on next page)

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IN THE EDITOR'S MAILBOX

To The Editor:

The October issue of the Rhode Island Medical Journal contains two articles which include autopsy findings. In at least one, a case report, the autopsy made a significant contribution. Neither article gave credit to or included as co-author the pathologist as a professional colleague.

While pathologists are infrequently affected by omissions such as these, the recognition of contributions by other physicians to a scientific article has at times also been neglected.

I believe that, whenever there is a professional contribution by idea or actual work, medical ethics require some form of recognition, and when the contribution is significant co-authorship should be offered. Physicians' contributions, pathologist or otherwise, are not be regarded as merely technical, and even important technical contributions need to be acknowledged.

It is obvious that in a case of multiple contributions not every single individual can be mentioned by name, but the head of the cooperating department or its representative who contributed should be acknowledged. Professional courtesy, I submit, also applies to medical writing.

GEORGE F. MEISSNER, M.D.
2 Estelle Street
Rumford, R.I. 02916

PHYSICIANS SERVICE ADOPTS PREVAILING FEE PROGRAM

At a special meeting of the Corporation of the Rhode Island Medical Society Physicians Service, held at the medical library on October 23, a prevailing fees program was adopted for implementation by the first of the year for programs calling for paid in full benefits without regard to incomes.

The Corporation review the various phases of the proposed program, including the method of determination of reasonable charges, the changes in usual fees by physicians, the changes in prevailing (customary) fee ranges, the payment to both participating and non-participating physician and the new physician's agreement, and after making one major amendment in the plan, adopted the program.

In the past weeks physicians have received by mail for individual review the profile developed on the basis of charges submitted during the past year to Physicians Service, so that individual profiles may prevail for all programs utilizing the usual and customary fee concept. After the survey and the establishment of prevailing levels, physicians have been asked to sign the new participation agreement.

Doctor Arnold Porter, president of the Physicians Service, informed the Corporation that he was naming a Medical Services Advisory Committee to advise the staff and the board of directors on medical phases involved in the new fee concepts, and he also gave assurance that every effort would be made to minimize the paper work required of physicians for the reporting of claims.

* * *

DEATH KNELL FOR HOSPITAL-RUN NURSING SCHOOLS?

A Brown University economics professor predicts that the growing trend toward college-type nurse training programs eventually will sound the death knell for hospital-run schools of nursing around the country.

Prof. Stuart H. Altman's prediction is based on the results of a study entitled "The Structure of Nursing Education and Its Impact on Future Supply."

The report marks completion of the first phase of a national nursing study by Prof. Altman under a two-year contract with the U.S. Public Health Service's Division of Nursing.

The study shows a trend toward more general collegiate education for prospective nurses, rather than the specialized training offered by hospital nursing schools.

It also concludes that the last few years have shown wage increases far in excess of those of the preceding five years and that continuation of this trend will help make nursing a more attractive occupation in future years.

There has been a continuous decline in the proportion of female high school graduates throughout the nation who have gone on to become professional nurses since 1950, according to the study. In 1952, about seven out of evry 100 female high school graduates took some form of nursing training. In 1966, the figure was about 4.5 out of every 100.

In the last 15 years, despite increasing public concern over a serious shortage of nurses and the award of millions in federal funds to enlist nurses, more than 200 hospital schools of nursing around the country have shut down.

This has been viewed as a strange paradox by many experts. The Altman study, however, concludes that while the introduction of collegiate programs for nurses has accentuated the decline of diploma programs, the trend toward college training has nonetheless had a positive influence on over-all nursing admissions.

Professional nursing associations, unhappy with the limited training provided by the hospital-run diploma schools, have given impetus to this trend toward more general college training. The study says the reason for this is that the associations feel limited hospital training programs put nurses in a subservient role and cause them to be totally dependent on nursing as a career.

(Continued on Page 757)



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Warning: In renal impairment, since liver toxicity is possible, lower doses are indicated; during prolonged therapy consider serum level determinations. Photodynamic reaction to sunlight may occur in hypersensitive persons. Photosensitive individuals should avoid exposure; discontinue treatment if skin discomfort occurs.

Precautions: Drowsiness, anorexia, slight gastric distress can occur. In excessive drowsiness, consider longer dosage intervals. Persons on full dosage should not operate vehicles. Nonsusceptible organisms may overgrow; treat superinfection appropriately. Treat beta-hemolytic streptococcal infections at least 10 days to help prevent rheumatic fever or acute glomerulonephritis. Tetracycline may form a stable calcium complex in bone-forming tissue and may cause dental staining during tooth development (last half of pregnancy, neonatal period, infancy, early childhood).

Adverse Reactions: *Gastrointestinal*—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. *Skin*—maculopapular and erythematous rashes; exfoliative dermatitis; photosensitivity; onycholysis, nail discoloration. *Kidney*—dose-related rise in BUN. *Hypersensitivity* reactions—urticaria, angioneurotic edema, anaphylaxis. *Intracranial*—bulging fontanels in young infants. *Teeth*—yellow-brown staining; enamel hypoplasia. *Blood*—anemia, thrombocytopenic purpura, neutropenia, eosinophilia. *Liver*—cholestasis at high dosage.

Upon adverse reaction, stop medication and treat appropriately.

Lederle

350-8

THROUGH THE MICROSCOPE

(Continued from Page 756)

Prof. Altman says his study shows that "the handwriting on the wall" indicates hospital nursing schools are on the way out.

The study shows that in 1949 only 7.5 per cent of all student nurses were enrolled in collegiate schools of nursing but that by 1966 the figure had risen to about 35 per cent. Estimates now are that admissions to associate and baccalaureate degree programs will exceed diploma school admissions before 1975.

The report cites increasing militancy on the part of professional nursing associations, along with competition from other professions, as major reasons for the upswing in nurses' wages during the past few years.

* * *

WORKING FOR YOU AND THE COMMUNITY

Anyone traveling Francis Street in Providence in the evening will see lights burning at the Rhode Island Medical Society library two or three nights each week. Unknown to the public at large, and probably to a great many of our own membership, is the fact that the Society has approximately thirty-five committees of physicians who give freely of their time and abilities to evaluate and develop programs in the interest of the advancement of good health for every citizen, and for the development of sound medical programs in every part of our state.

Because of a time honored tradition to avoid publicity the work of these devoted members who serve on the committees seldom gets the recognition that is warranted. The satisfaction of a job "well done" is the member's reward, and certainly no organization in Rhode Island devotes more time to community problems and their possible solution than does your own state medical society.

Consider the activities of the past two months, for example.

The Child-School Health committee met to review the recently issued study of health education in the schools of the State, and to formulate medical policies to implement phases of this study, and also to work with the Department of Education in federal-state subsidies to the various school districts.

The Mental Health committee drafted, after several lengthy sessions, a proposed legislative act for a division of mental health within the state department of health, and it hopes to introduce this legislation at the next session of the General Assembly. Incidentally this work progressed without knowledge of the findings of the special legislative appointed professional review of the state department of social welfare which indicated the

(Continued on next page)

MADELAINE BROWN

(Concluded from Page 752)

Muscular Paralysis and Electrocardiographic Abnormalities Resulting from Potassium Loss in Chronic Nephritis. JAMA 124:545-549, Feb. 26, 1944

Brown, M. R., and Hastings, J. L.: Role of Arsenic in Production of Alcoholic Polyneuritis. Science 105:256, March 7, 1947

Geriatrics—Epilepsy in Old Age. Geriatics 2:230-232, July-Aug. 1947

Paroxysmal Cerebral Dysrhythmia Following Large Doses of Potassium Chloride. Arch. Neurol. & Psychiat. 60:301-302, September 1948

The Factor of Heredity in Labyrinthine Deafness and Paroxysmal Vertigo (Ménière's Syndrome). Ann. Otol. Rhin. & Laryng. 58:665-670 September 1949

The Incidence and Heredity of Muscular Dystrophy. A Study of Seventy-One Patients Admitted to Massachusetts General Hospital. New England J. Med. 244:88-90, Jan. 18, 1951

Symposium on Specific Methods of Treatment; Classification and Treatment of Headache. M. Clin. North America 35:1485-1493, September 1951

"Wetherbee ail." The Inheritance of Progressive Muscular Atrophy as Dominant Trait in Two New England Families. New England J. Med. 245:645-647, Oct. 25, 1951

Viets, H. R., and Brown, M. R.: Medical Progress; Diseases of Muscles. New England J. Med. 245:647-653, Oct. 25, 1951

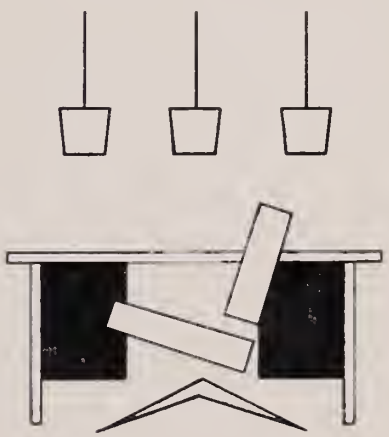
The Mechanism Involved in Polyneuritis as Exemplified by Postdiphtheritic Polyneuritis. Ann. Int. Med. 36:786-791, March 1952

Medical Progress; Disease of Muscle. New England J. Med. 254:321-326, Feb. 16, 1956

The Inheritance of Progressive Muscular Atrophy as a Dominant Trait in Two New England Families. New England J. Med. 262:1280-1282, June 23, 1960

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need for the very program which your Society's committee has been working on all year.

Your Mediation Committee met to review alleged professional liability cases, giving impartial review and opinion on all such matters after a thorough study of all the records of treatment involved. In addition, the committee handled the many complaints, some justifiable, and some not, that are received from the general public.

The Committee on Medical Economics engaged in a vital study which it hopes will result in a most satisfactory disability compensation insurance plan that will offer good coverage for every member of the Society regardless of age or present insurability. This is a challenging task that necessitates a keen knowledge of insurance issues and benefits.

The problem of ethical-legal issues in the matter of human organ transplants has resulted in the appointment of a special study committee on the subject by the Society. This committee is already at work on its task, and it aims at a complete report to the House of Delegates in January that should go a long way towards clarifying the medical profession's position in this new phase of surgical treatment.

The Industrial Health Committee considered developments that will lead to better health care in industry, and it will also seek to secure passage of legislation in January by the General Assembly of the bill introduced this year to allow a nurse to use a narcotic drug, on telephone order from a physician, in the case of an industrial accident and prior to the arrival at the scene of a physician or a rescue unit.

The Medical-Legal Committee met in conference with a similar committee of the Rhode Island Bar Association to seek understanding on mutual problems involving members of both professions.

Such is the monthly parade of committees to your Society's headquarters throughout the year, with committees concerned with cancer, diabetes disaster, highway safety, alcoholism, hospital-physician relations, maternal health, medical aspects of sports, blood, medicine and religion, nursing, nutrition, perinatal mortality, workmen's compensation, pollution, public laws, scientific work, and social welfare, all claiming time for conferences that will aid each member of the Society, and every citizen of the State.

Therefore, when someone asks what does the Rhode Island Medical Society do, keep in mind some of these many activities which involve the so-called "leisure" time of the busy physicians of our state throughout the year.

* * *

MEDICAL CARE COSTS CONFERENCE

Approximately 120 representatives of medical societies, hospitals, and allied health groups met in Boston on November 1 and 2 for a Conference on Medical Care Costs which was sponsored by the federal Department of Health, Education and Welfare. This was one of several regional meetings that the Department is holding throughout the nation to explore the rising costs of providing quality medical services, and the Boston meeting was in the form of a workshop session with the invited delegates meeting in small groups to explore basic issues of the overall problem.

Rhode Island Medical Society physicians invited to attend to Conference were Drs. John J. Cunningham, president; Dr. Stanley D. Simon, president-elect, and Dr. Peter Mathieu, chairman of the social welfare commitee, and from Physicians Service, Dr. Arnold Porter, president. About one-fourth of the total delegates to the conference were physicians.



WORKMEN'S COMPENSATION

(Concluded from Page 747)

still administered by the courts. The State administrative agency usually has exclusive jurisdiction over the determination of facts with appeals to the courts limited to question of law. It is the function of this agency to provide efficient and equitable administration of benefits. Occasionally, a question of fact or even a formal challenge of a medical issue will require the presence of the attending physician at a hearing. It is the physician's duty to his patient and to his state to cooperate fully in the determination of the facts in the case.

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Edalogy . . .
(Ethnic Medicine)

GEOGRAPHICAL DISTRIBUTION OF GASTROINTESTINAL CANCERS IN INDIA WITH SPECIAL REFERENCE TO CAUSATION

There were 470 instances of gastrointestinal cancer seen among the railway populations in various parts of India over the 5-year period 1960 to 1964; these were analyzed in a search for causation. Gastrointestinal cancers are the most common malignant tumors in India.

Oropharyngeal cancers formed 39 per cent of the total and showed a geographic distribution which confirms the previously reported association with betel chewing, but does not support the thesis that tobacco leaf is the causative agent. However, a close correlation with the consumption of lime in the betel leaf and the distribution of these cancers was noted; the use of slaked lime in the paan may damage the mucous cells of the epithelium by its highly alkaline reaction, resulting in epithelial proliferation with an increase in mitotic activity.

Stomach cancers were common in the south of India and rare in the north, but incidence of primary cancers of the liver and gallbladder were common in the north and rare in the south. The pattern of diet and eating influences the flow rates of bile. The flow rates of bile may play a role in the pathogenesis of gastric cancers and hepatoma and cancer of the gallbladder. The geographic differences in the incidence rates of cancer of the colon also appear to be related to dietary factors.

Malignant disease involving mucous membranes may be the result of chronic interaction of an abnormal alkaline milieu in the intracellular mucus of the mucous cells of epithelium.

. . . Malhotra, S. L.: Gut (London) 8:361, 1967

* * *

ATAXIC NEUROPATHY IN NIGERIA

The author studied 84 cases of an ataxic neuropathy common in the coastal towns of Ijebu Province ow Western Nigeria. The sex incidence is equal. The highest incidence is between ages 30 to 50 years. It is a disease of the poorer classes. The commonest physical findings are posterior column sensory loss, ataxic gait, rombergism, bilateral optic atrophy, perceptive deafness, and wasting and weakness in the legs. Extensor plantar reflexes and superficial sensory loss are less common. One third had mucocutaneous evidence of ariboflavinosis. Cerebrospinal fluid examination shows no abnormality. Protein nutrition is normal. Calorie intake is subnormal. Riboflavin and, to a lesser extent, thiamine intake is low. Serum folic acid and B_{12} are normal or high. Plasma and urinary thiocyanate levels are high and they fall with an improved diet containing little or no cassava. Electromyography confirms lower motor neurone lesions in patients with clinical evidence of polyneuropathy. Motor nerve conduction is slowed in the lateral popliteal nerve and normal in the ulnar and median nerves. The syndrome seems to be related to chronic exposure to dietary cyanide, found in culinary derivatives of cassava.

. . . Osuntokun, B. O.: Brain 91:215, (June) 1948

* * *

SURGERY AND PATHOLOGY ON THE NILE

Disease Along Kagera River

The countries of Burundi and Rwanda border on the Kagera River.

In Burundi a high proportion of major surgery is devoted to the cure of peptic ulcer. Nearly half of all major operations are performed for this condition. The ulcer incidence must be unusually high throughout Rwanda and Burundi. As in other parts of East Africa, it is the duodenum rather than the stomach that is almost invariably involved.

The commonest cause of intestinal obstruction in these territories is ileocolic or colocolic intussusception occurring in adults. This is often a chonic condition with a history of repeated episodes of temporary or partial intestinal obstruction. The apex of the intussusception may protrude through the anus and can be mistaken by the unwary for a rectal prolapse. In contract strangulated hernia is rarely seen.

A deformity commonly seen among the Bahutu in Rwanda and Burundi, and in immigrants from these countries to Uganda, is shortening of the fourth metatarsal, often bilateral, which causes the fourth toe to lie behind the others.

Bladder stones, particularly in young boys, appear to be more common in these countries than in East Africa.

Gastric cancer, rare throughout most of tropical Africa, has a high incidence throughout the mountainous region near the center of the continent that consists of Rwanda, Burundi, eastern Kiva (Congo), southwestern Uganda, and extreme northwestern Tanzania. This neoplasm is the most frequently recorded neoplasm in several hospitals within the area outlined above. In two neighboring mission hospitals just east of the Rwanda-

(Continued on next page)

Tanzania border gastric cancer regularly heads the list of tumors admitted.

With the exception of occasional cases seen in other continents, the bizarre tumor, Kaposi's sarcoma, might be considered almost peculiar to Africa. The highest recorded incidence has been in northeastern Congo, and next to this, Rwanda and Burundi, and the West Nile district of Uganda appear to be the areas where the tumor is most prevalent. This condition is peculiar, not only in its exceedingly high male-to-female sex ratio, but also in the fact that the clinical manifestation is usually totally different in childhood from that in adult life. In the former it presents as peripheral lymph gland enlargement and in the latter as multiple dome-shaped nodules involving the skin and subcutaneous tissues, affecting the distal parts of the limbs.

Primary cancer of the liver, common throughout most of tropical Africa, is prevalent in countries bordering the Nile at least as far north as southern Sudan.

Areas of low incidence of a particular form of cancern can be as epidemiologically significant as areas of high incidence.

Esophageal cancer and Burkitt's lymphoma are virtually unknown in Rwanda and Burundi.

Health Around Lake Victoria

The lake is bordered by Uganda, Kenya, and Tanzania.

Urethral stricutre is encountered much more frequently in tribes dwelling near the north and west of the lake than in those further north near the Albert and Victoria Nile. The incidence of urethral stricture reflects some factor such as an undue tendency to fibrous tissue formation, additional to gonorrheal infection.

Sigmoid volvulus is one of the commonest causes of intestinal obstruction among the Basoga and Baganda tribes living to the immediate north and northwest of the lake. Shepherd reported no less than 425 cases from Mulago Hospital.

Intestinal knot is a condition where loops of pelvic colon and small bowel literally form a knot. The onset is sudden, with severe abdominal pain and profound shock. Both bowel loops are frequently gangrenous by the time the patient reaches hospital and mortality is consequently high. Shepherd reported no less than 92 patients with this condition seen at Mulago Hospital, Kampala, in a 16-year period. In contrast, a total of only three cases have ever been reported in Great Britain.

Strangulated heria has extreme geographical variations. Whereas approximately 12 strangulated hernias are admitted annually to the Kenyatta hospital in Nairobi, over 200 are admitted to Mulago Hospital, Kampala, which is of similar size, and 400 miles to the northwest. At Jinja Hospital, situated where the Nile leaves the lake, over 400 strangulated hernias are operated on annually.

A high proportion of the strangulated hernias seen at Jinja are direct inguinal hernias. Eckhart attributed this to an anatomical variation in the inguinal canal. Zivanovik has recently related the incidence of inguinal and femoral hernia to the height of the pelvic arch.

The incidence of penile cancer is high all round the lake. The tribe concerned are not circumcised. In this context it must be pointed out that other factors operate besides circumcision status, for great incidence variations can be observed between uncircumcised tribes. The incidence of penile cancer is second only to liver cancer in males in Uganda.

The highest known local concentration of esophageal cancer in Africa, apart from the Transkai in South Africa, is in the western Nyanza region in Kenya. In the regional hospital for this area it is not uncommon to have six or seven patients under treatment simultaneously. At Kisumu Hospital esophageal cancer accounts for over a quarter of all neoplasia. In part of this region esophageal cancer accounts for over 70 per cent of all malignant disease in men over 30 years of age. One of the most remarkable features of this area is that the high incidence falls off so steeply, particularly to the north and south, that within 70 miles of Kisumu esophageal cancer is a rare tumor.

Burkitt's lymphoma accounts for some 50 per cent of all childhood cancer around Lake Victoria.

Victoria Nile

This is the portion of the river which joins the upper end of Lake Victoria with the upper end of Lake Albert.

In this part of the Nile's course both gastric and esophageal cancer are rare. Epitheliomata developing in chronic ulcer scars are common, as they are over most of East Africa. The incidence of penile cancer varies between tribes. Burkitt's lymphoma is common, as is primary liver cancer.

Albert Nile

The pathology encountered in this stretch of the river resembles that of the Victoria Nile — with some modifications. The highest reported incidence of Kaposi's sarcoma in East Africa is in the West Nile District of Uganda, where it accounted for 7 per cent of all malignant tumors. Burkitt's lymphoma also has its maximum incidence in the West Nile district with an incidence of 19 per cent of all patients with cancer.

In contrast to the source of the Nile where gastric cancer is so prevalent, and the Kisumu region where all other malignant tumors are dwarfed by esophageal cancer, only a single case of each of these tumors occurs in a series of 317 malignancies recorded over a 15-year period in the West Nile district of Uganda.

The White Nile

This name has been applied to the stretch of river between the Uganda-Sudan border and the junction with the Blue Nile at Khartoum.

Hernias are common in Equatorial Province. Nabri operated on over 300 in two years. Of particular interest was the contrast between his 50 strangulated hernias in Juba and the 2 only encountered in a similar period in a slightly larger hospital at Port Sudan.

Even more striking is the change that occurs in the incidence of femoral hernias. This condition is common in southern Sudan, where Nabri operated on 19 in two years. Most Sudanese surgeons have never seen a femoral hernia other than in a southerner.

Burkitt's lymphoma, so prevalent in southern Sudan, has rarely been reported from farther north. Nowhere in East Africa or in southern Sudan is breast cancer common. In northern Sudan it is the most frequently recorded type of cancer. Common in southern Sudan, penile cancer is rarely seen in the north where circumcision is almost unknown in the indigenous population of East Africa and southern Sudan. It is not uncommon in northern Sudan.

Although common along the Albert and first part of the White Nile, Kaposi's sarcoma is rarely seen north of Equatorial Province. Tropical ulcers are rare north of the southern provinces, consequently scar epithelioma developing on the scars of chronic tropical ulcers are also rare in the north.

. . . Burkitt, D. P.: JAMA 205:604, (Aug. 19) 1968



LACTIC DEHYDROGENASE

(Concluded from Page 745)

[10]Wrobleski, F.: Mechanisms of Alteration in Lactic Dehydrogenase Activity of Body Fluids. Ann. New York Acad. Sci. 75-322, Oct. 13, 1958

[11]Wrobleski, F.: Significance of Alterations in Lactic Dehydrogenase Activity of Body Fluids in Diagnosis of Malignant Tumors. Cancer 12:27, 1959

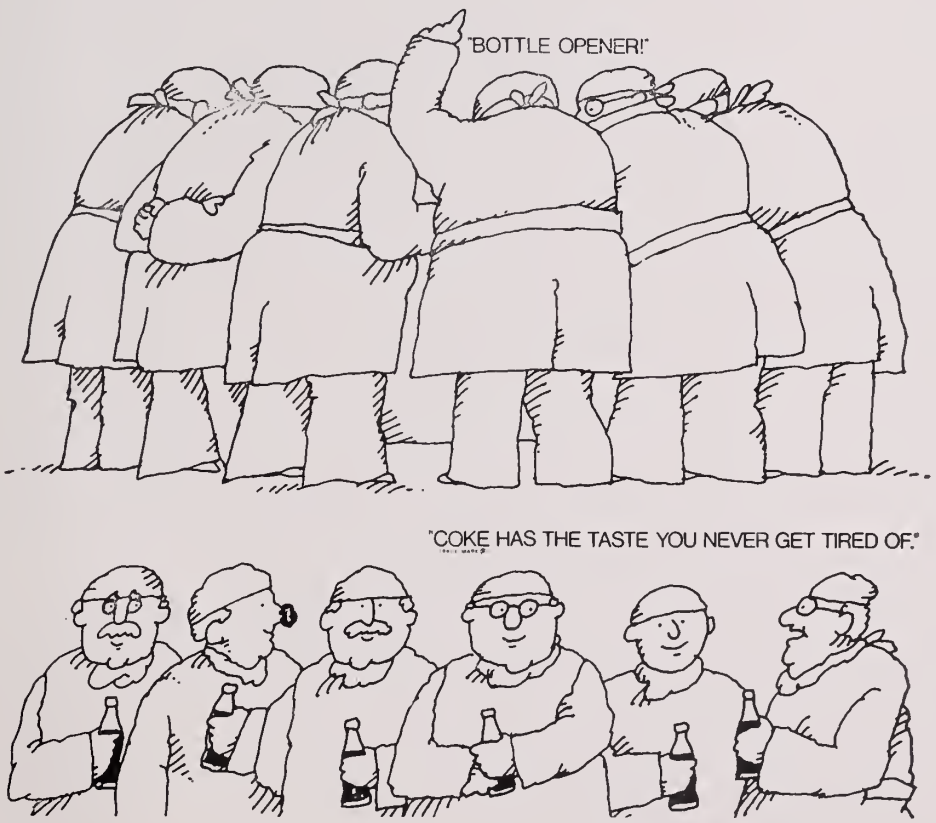
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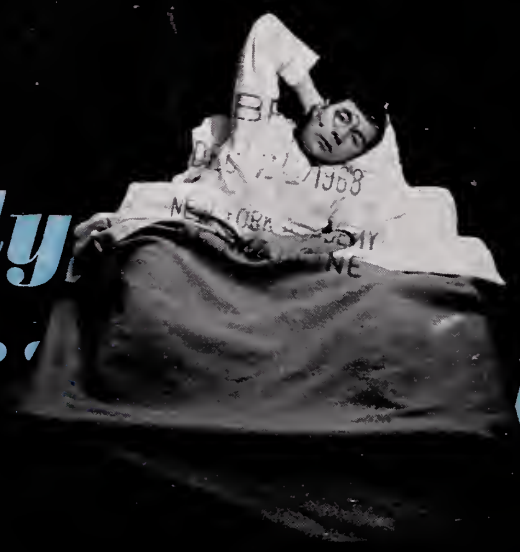
DERMAQUIZ ANSWER

(See Page 721)

Left, squamus cell carcinoma. Right, Common Warts, Verruca Vulgaris.



ready for bed..



...but not for sleep

...because psychic tension may not stop at night

The calming action of Valium (diazepam) helps counteract psychic tension and reduce overreaction to stresses during the day. Often the t.i.d. dosage schedule is enough to prevent build-up of tenseness that may interfere with sleep at night.

However, when psychic tension does contribute to sleeplessness, Valium can be especially useful. A tablet at bedtime, added to the daytime t.i.d. dosage, can help your patient be ready for bed *and* for sleep.

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome, convulsive disorders (not for sole therapy).

Contraindicated: Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma.

Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms have occurred following abrupt discontinuance. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence. In pregnancy, lactation or women of childbearing age, weigh potential benefit against possible hazard.

Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed. Usual precautions indicated in patients severely depressed, or with latent depression, or wit suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclu ataxia or oversedation.

Side Effects: Drowsiness, confusion, diplopi hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such a acute hyperexcited states, anxiety, hallucin tions, increased muscle spasticity, insomni rage, sleep disturbances, stimulation, have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

Valium®
(diazepam)

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Division of Hoffmann-La Roche Inc.
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The New York Academy of Medicine

DUE IN TWO WEEKS UNLESS RENEWED
NOT RENEWABLE AFTER 6 WEEKS

DATE BORROWED	BORROWER